

NEWARK BAY STUDY AREA

ADDITIONAL SITES AND CANDIDATE PRPS FOR THE NEWARK BAY STUDY AREA

VOLUME II OF IV

PRP DATA EXTRACTION FORM AND EVIDENCE CONCERNING:

EXXON MOBIL CORPORATION BAYONNE SITE

PREPARED BY: TIERRA SOLUTIONS, INC.

SUBMITTED TO: USEPA REGION II

MAY 2007

ADMINISTRATIVE CONSENT ORDER SITE HISTORY DELIVERABLE ITEMS EXXON COMPANY, U.S.A. BAYONNE PLANT BAYONNE, NEW JERSEY

January 1993

Prepared for

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ADMINISTRATIVE CONSENT ORDER APPENDIX B, SECTION IIB - SITE HISTORY DELIVERABLES

VOLUME I

CONTENTS

Appendix	Item No.	
Α	1	Operational History.
В	2	Raw Materials and Products.
C	3	Disposal Practices.
D	4	Historical Maps and Drawings (submitted separately as Volume II).
E	5	Aerial Photographs.
F	6	Site Water Budget.
G	7	Area Geology and Hydrogeology - Contained in the Site History Report by Geraghty and Miller, Inc. (1993), under separate cover.
Н	8	ECRA Submissions.
1	9	Permits.
1	10	Summary of Civil and Criminal Enforcement Actions.
K	11	Hazardous Substance Storage.
L	12	Hazardous Substance Inventory.
M	13	Hazardous Substance Discharges.
N	14	Pollution Data.
0	15	Existing Environmental Data - Contained in Geraghty and Miller, Inc. (1993) Site History Report.
P	16	Spill and Fires.

ADMINISTRATIVE CONSENT ORDER SITE HISTORY DELIVERABLE ITEMS EXXON COMPANY, U.S.A BAYONNE PLANT BAYONNE, NEW JERSEY

This document is a compilation of site history information (Site History Deliverable Items) in accordance with the Administrative Consent Order (ACO), Appendix B, Section IIB, Items 1 through 16. For organizational purposes, each Site History deliverable item has been referred to as an appendix and an appropriate tab has been used. Appendix D (Item 4) is being submitted as a separate volume because of its size. Some of the information provided in this document has also been included in the Site History Report (Geraghty & Miller, Inc. 1993), and was used for planning the scope of work of the Remedial Investigation (RI) Work Plan (Geraghty & Miller, Inc. 1993). This document is being submitted concurrently with those reports.

APPENDIX A OPERATIONAL HISTORY

Presently, two separate Exxon divisions are at the Exxon Bayonne Plant. Exxon Company, U.S.A. currently operates a marketing terminal consisting of the storage, packaging, and distribution of petroleum products, and Exxon Chemical Americas is currently dismantling a "limited" chemical plant that manufactured lube oil additives. The location of Exxon Chemical Americas is shown on Figure A-2, which depicts the operational areas at the Site.

TYPE OF OPERATION

From 1877 to 1972, the primary activity at the Exxon Bayonne Plant was petroleum refining (CH2M Hill, Inc. 1991). A large modernization program was undertaken in the late 1950s to upgrade the Site. Processes included distilling crude oil into various fractions or component parts, such as gasoline, naphtha, heating oil, and asphalt; blending and shipping of lubricating oils; manufacturing asphalt; and producing wax (Dan Raviv Associates, Inc. 1992). In 1972, the refining operations were dismantled, wax manufacturing operations ceased (Dan Raviv Associates, Inc. 1992), and the Site functioned primarily as a petroleum products storage facility, a wholesale distribution facility with various blending and packaging operations, and an oil additives manufacturing plant.

Chemical manufacturing began in the early 1930s. The Exxon Chemical Plant, (Figure A-3) operated under the trade name Paramins and was called the Paramins Plant. The Chemical Plant also used an on-site laboratory for product testing and research (Dan Raviv Associates, Inc. 1992). Products manufactured included viscosity modifiers, pour depressants, and friction modifiers. Dismantling of the Chemical Plant began in 1991.

The main products that were handled at the Bayonne Plant are miscellaneous naphthas, aviation gasoline, aliphatic and aromatic solvents, distillate fuels, intermediate and heavy fuel oils, lube oils, process oils, waxes, asphalts, and petroleum additives (Exxon Company, U.S.A. and Exxon Chemical Americas 1990). Solvent operations have been terminated since August 1992 (Fairchild 1993), and the solvent tanks are idle. Products are shipped in and out of the Plant by trailer trucks (packaged products), tank trucks, railroad cars, barges, and tankers.

Products are transferred within the plant via pipelines and stored in aboveground storage tanks. Many of the tanks are being phased out of service as the Plant reduces operations. A list of chemicals that are stored, blended, or transferred at the Site is provided in Attachment B-III of Appendix B of the ACO Site History Deliverables.

An inter-plant/refinery pipeline system, for bi-directional transfer of products, connects Exxon's Bayonne Plant and Bayway Refinery in Linden, New Jersey. However, a rupture in the line occurred in Linden, and the pipeline has been designated as "out of service indefinitely," since January 2, 1990 (Exxon Company, U.S.A. and Exxon Chemical Americas 1990).

DESCRIPTION OF OPERATIONAL AREAS

For organizational purposes, 13 operational areas at the Site have been identified. These areas have been defined strictly on the basis of type of operation. The operational area boundaries within the Site are shown on Figure A-2 and an inventory of tanks within each operational area is presented in Table K-1 (see Appendix K of the ACO Site History Deliverables). The following descriptions of the operational areas were derived primarily from CH2M Hill, Inc. (1991) and Exxon Company, U.S.A., and Exxon Chemical Americas (1990).

The 13 operational areas (see Figure A-2) are as follows: "A"-Hill Tank Field, Lube Oil Area, Pier No. 1 Area, No. 2 Tank Field, Asphalt Plant Area, Aviation-Gas Tank Field (AV-Gas Tank Field), Exxon Chemical Plant Area (also referred to as Chemical Plant Area), No. 3 Tank Field, General Tank Field, Solvent Tank Field, Low Sulfur Tank Field, Piers and East Side Treatment Plant Area, and Domestic Trade Area. Included in the 13 operational areas are three active piers (Piers No. 1, No. 6, and No. 7), which are used for the loading and unloading of marine vessels at the Site. A historical map from 1983 showing the operational areas, transfer areas, tank fields, and other facilities has been provided in Attachment A-I.

"A"-Hill Tank Field

The "A"-Hill Tank Field is located in the northwestern part of the plant and comprises 15 acres bounded by East 22nd Street and ICI Americas, Inc. to the north; Avenue J and the main building area to the east; railroad tracks and the Lube Oil Area to the south; and property owned by International Matex Tank Terminals (IMTT) to the west.

The "A"-Hill Tank Field consists of ten tanks in three bermed areas. The tanks range in capacity from 14,703 to 76,980 barrels and contain recycled oil and storm water.

Lube Oil Area

The Lube Oil Area is located in the west-central part of the plant and comprises 54 acres bounded by railroad tracks and the "A"-Hill Tank Field to the north; the Asphalt Plant Area, and property owned by Gordon Terminal Service Company to the east; the Pier No. 1 Area to the south; and property owned by IMTT and the Platty Kill Creek to the west.

The Lube Oil Area contains five tank fields as follows: Finished Products, Base Stock, Necton, Wax, and Old Wax. The Lube Oil Area also contains a stockpile area, a blending and packaging warehouse, and the West Side Treatment Plant. Approximately 236 tanks, ranging in capacity from 60 to 45,600 barrels, are in this area (see Table K-1 in Appendix K of the ACO Site History Deliverables). Approximately 200 tanks in the 0 to 200 series, 400 series, and 500 series are in use at the Lube Oil Area. The tanks store various petroleum products, such as transmission fluid, lubrication oils, oil additives, and waxes. Drains and sewers in the Lube Oil Area discharge to the West Side Treatment Plant. The West Side Treatment Plant effluent is pumped underground to the East Side Treatment Plant. The Hazardous Waste Drum Storage Area is located within the Greer Wax Building.

The Lube Oil Area railroad car transfer area is next to the blending and packar' warehouse. The transfer area consist of three railroad spurs that terminate on a comp'

paved concrete area covered by a metal roof. There is one major tank truck loading/unloading area in the Lube Oil Area. The area is paved with concrete and is covered by a metal roof. Trucks load and unload on a paved surface from numerous tanks in the Base Stock (south), and Finished Products (north) Tank Fields.

The Lube Oil Area also contains ten tanks in the 600 series, which are located near Pier No. 1 and range in capacity from 3,500 to 4,223 barrels. Tanks 612 and 616 are for 90-day hazardous waste oil storage. Tanks 611, 613, 614, and 615 are inactive. The other tanks in this group are used for the West Side Treatment Plant.

Pier No. 1 Area

Pier No. 1 is located in the southwestern part of the plant and comprises 16 acres bounded by the Lube Oil Area to the north; land owned by Gordon Terminal Service Company to the east; the Kill Van Kull Waterway to the south; and land owned by the IMTT and Platty Kill Creek to the west.

Pier No. 1 is one of three active piers utilized for the loading and unloading of marine vessels at the Site. Several large in-facility pipes run in elevated pipe racks from the marine loading tower on Pier No. 1 to the Lube Oil Area.

No. 2 Tank Field

The No. 2 Tank Field is located in the northwestern part of the plant and comprises 10 acres bounded by railroad tracks and the main building area to the north; the AV-Gas Tank Area to the east; the Asphalt Plant Area to the south; and Avenue J and the "A"-Hill Tank Area to the west.

The No. 2 Tank field consists of eight tanks in one bermed area. Each tank has a capacity of approximately 157,400 barrels and stores No. 2 fuel oil. The dikes are intact, and in good repair.

Asphalt Plant Area

The Asphalt Plant Area is located in the central part of the Site and comprises 17 acres bounded by the No. 2 Tank Field and the AV-Gas Tank Field to the north; railroad tracks and the Low Sulfur Tank Field to the east; the No. 3 Tank Field and the Chemical Plant Area to the south; and the Lube Oil Area to the west.

The Asphalt Plant Area consists of approximately 41 tanks in four concrete-curbed areas and two soil-bermed areas. The tanks range in capacity from 440 to 38,254 barrels. Most of the tanks contain cutback asphalt and asphalt cement, which are not liquid at ambient temperatures. Three tanks in the earthen-bermed area of the Asphalt Plant contain kerosene and Varsol, which are liquid at ambient temperatures. Another railroad car transfer area is located in the north of the Asphalt Plant Area. The transfer area consists of two railroad branches that terminate on a paved concrete area.

AV-Gas Tank Field

The AV-Gas Tank Field is located in the north-central part of the Site and comprises 5 acres bounded by railroad tracks and the Domestic Trade Area to the north and east; the Asphalt Plant Area to the south; and the No. 2 Tank Field to the west.

The AV-Gas Tank Field consists of ten tanks in two bermed areas, which are effectively separated by a berm. The tanks range in capacity from 12,592 to 96,324 barrels. The tanks contain kerosene, aviation gasoline, toluene, hexane, heptane, and cutback naphtha. The drains inside the secondary containment area route storm-water runoff to the East Side Wastewater Treatment Plant.

Exxon Chemicals Plant Area

The Exxon Chemicals Plant Area (also known as the Chemical Plant), which is currently being dismantled, manufactured additives for lubricants, fuels, and automatic transmission fluids as a batch-type operation in small reactor vessels. In addition to making additives, the plant batch-blended additives for fuel and automatic transmission fluids.

The Chemical Plant Area is located in the central part of the Site and comprises 10 acres. The Asphalt Plant Area is adjacent to the north and east and the No. 3 Tank Field is to the south. The Lube Oil Area is the closest operational area to the west.

The Chemical Plant Area contains approximately 14 tank fields with 90 tanks ranging in capacity from 57 to 3,964 barrels, a hazardous waste drum storage area, a chemical wastewater separator, and a building that houses the process reactor vessel. The chemical wastewater separator is used to store process wastewater before it is removed off-site. Two sewer systems serve the Chemical Plant Area.

Some of the sewers in the plant area were recently separated from the wastewater treatment system at the main facility, and their contents are piped underground to the chemical wastewater separator. Wastewater collected in the chemical wastewater separator is sent to Exxon's Bayway Chemical Plant wastewater treatment facility. Other drains and sewers in the Site area are connected to the Bayonne facility's East Side Wastewater Treatment System. The Site area is paved with concrete.

The Chemical Plant railroad car transfer areas are located south of the tank farm areas. The larger transfer area consists of four railroad spurs that terminate on a bermed and paved concrete area. A smaller transfer area, which is next to the former Chemical Plant warehouse, consists of one railroad branch that terminates on a paved area. There are 12 tank truck loading/unloading areas in the Chemical Plant Area. These areas are all paved with concrete.

No. 3 Tank Field

The No. 3 Tank Field is located in the south-central part of the Site and comprises 21 acres bounded by the Exxon Chemicals Plant Area and the Asphalt Plant Area to the north; Amerada Hess Corporation, Great Gee Distributions, Inc., Powell Duffryn Terminal, and G & B Packaging Company, Inc. to the south; and J & L Steel Barrel Company to the west.

The No. 3 Tank Field consists of nine tanks in three bermed areas. The tanks range in capacity from 24,447 to 114,680 barrels and contain gasoline, hydrotreated light naphtha, light naphtha, asphalt, and residual fuel oil.

General Tank Field

The General Tank Field is located in the northeastern part of the Site and comprises 32 acres bounded by the City of Bayonne property to the north; the Upper New York Bay and the Piers and East Side Treatment Plant Area to the east; the railroad tracks and the Solvent Tank Field to the south; and the Lower Hook Road and the Domestic Trade Area to the west.

The General Tank Field consists of 14 tanks in two secondary containment areas. The tanks range in capacity from 85,159 to 170,000 barrels. The tanks contain diesel fuel, residual fuel oil, No. 2 heating oil, turbo fuel A, and storm water. Because the dikes between the two bermed areas have been lowered, a single containment area has effectively been formed.

Solvent Tank Field

The Solvent Tank Field (currently operationally idle) is located in the eastern part of the Site and comprises 10 acres bounded by railroad tracks and the General Tank Field to the north; the Piers and East Side Treatment Plant Area to the east; the Low Sulfur Tank Field to the south; and the Domestic Trade Area to the west.

The Solvent Tank Field consists of 18 tanks in two bermed areas. The tanks have capacities ranging from 170 to 33,281 barrels and contained various blends of asphaltic and aromatic solvents.

The solvent railroad car transfer area is located immediately north of the Solvent Tank Field. The transfer area consists of three railroad spurs that terminate on a gravel area. There are two railroad loading/unloading areas on these railroad spurs, one to the east and one to the west, but the one on the west has not been active for several years. The western transfer area is currently used as a railroad car storage area.

Low Sulfur Tank Field

The Low Sulfur Tank Field is located in the southeastern part of the Site and comprises 9 acres bounded by the Solvent Tank Fields to the north and east; the railroad tracks, the Constable Terminal Corporation and Garden State Converters, Inc. to the south; and the Asphalt Plant Area to the west.

The Low Sulfur Tank Field consists of six tanks in a single bermed area. Each tank contains residual fuel oil and has a capacity of approximately 170,000 barrels.

Piers and East Side Treatment Plant Area

The Piers and East Side Treatment Plant Area is located in the eastern part of the Site and comprises 7 acres bounded by Upper New York Bay on the north, east, and south; and the Solvent Tank Field to the west. This area includes Piers No. 6 and No. 7.

This area consisted of eight tanks in three bermed areas. The east side separator and the metropolitan distribution warehouse (MDC Building) are also located in this area.

The solvents tank truck loading and unloading area consists of eight loading bays located east of the Solvent Tank Field. All loading rack activities are directed from the central control house, and transfer operations to or from the Solvent Tank Field and the AV-Gas Tank Field are conducted with pipelines. A solvent drum filling and storage facility, which is currently idle, is also located in this area. Several large in-facility pipes run from Pier No. 6 and Pier No. 7 to various tank fields. There is a separate rack for emptying tank trucks near the railroad tracks.

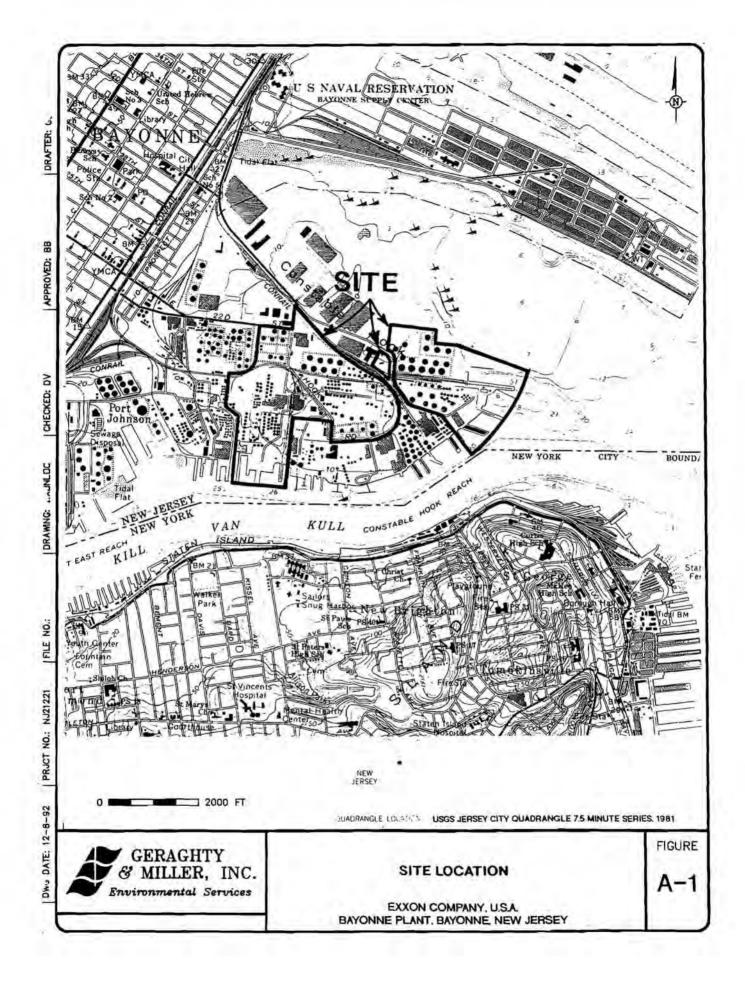
Domestic Trade Area

The Domestic Trade Area, which is currently idle, is located in the north-central part of the Site and comprises 5 acres bounded by the Lower Hook Road and the General Tank Field to the north and east; by railroad tracks and the AV-Gas Tank Field to the south; and by the City of Bayonne Municipal Garage to the west. Retail distribution of fuels occurs in the Domestic Trade Area, which contains one "miscellaneous" aboveground storage tank (Tank No. 1051, which is idle) and a multiple truck loading rack.

REFERENCES

- CH2M Hill, Inc. 1991. Best Management Plan for the Exxon Bayonne Facility, January 31, 1991.
- Dan Raviv Associates, Inc. 1992. Proposed Interim Remedial Measures Work Plan for the Exxon Company, U.S.A., Bayonne Plant, Bayonne, New Jersey, February 25, 1992.
- Exxon Company, U.S.A. 1989. Letter from C.J. Hess to T. Hayes, New Jersey Department of Environmental Protection, Division of Water Resources. Re: Exxon Bayonne Plant, N.J. 0002089, August 11, 1989.
- Exxon Company, U.S.A. and Exxon Chemical Americas. 1990. Spill Prevention Control and Countermeasure Plan, Discharge Preventions, Containment and Countermeasure Plan and Discharge Clean-up and Removal Plan, Bayonne Plant, Bayonne, New Jersey. Revised August 1, 1990.
- Fairchild, R.E. 1993. Personal communication with B. Blum, Geraghty & Miller, Inc., January 15, 1993.

#NJ212.12 #NJ212.**-wp1/appa.doc.doc



JRR LA

LYPLANATION

SHE BOUNDARK

COLEVILLIAM VELV BORNDYS.

TANK TRUCK LOADING/UNLOADING AREA

NOTES

ADAPTED FROM DAN RAYLY ASSOCIATES, INC. (1992)
TANKS AND STRUCTURES IN THE CHEMICAL PLANT AREA
ARE CURRENTLY BEING DISMANNED.



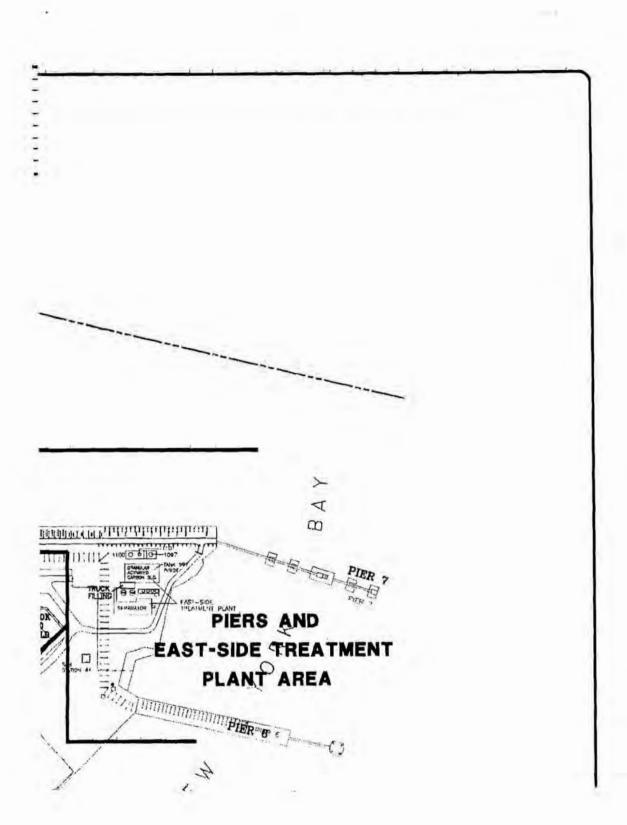
O 200 FT

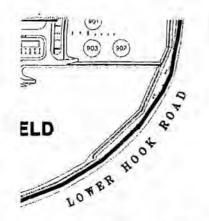
OPERATIONAL AREAS, SITE BOUNDARIES, AND NEIGHBORING INDUSTRY

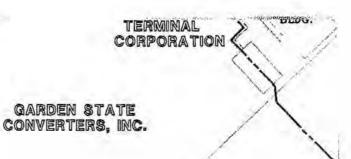
EXXON COMPANY, U.S.A. BAYONNE PLANT, BAYONNE, NEW JERSEY

FIGURE

A-2







Great Gee Distributors, Inc.

> amerada hess corporation

N.C.

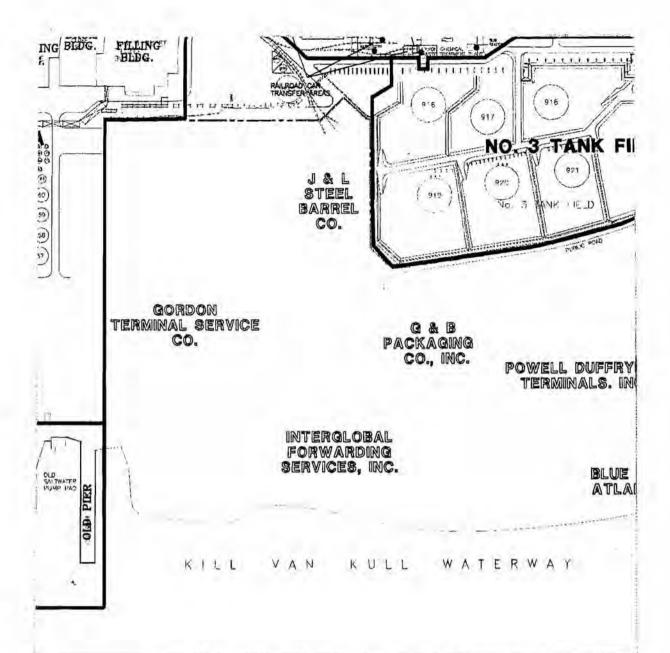
CIRCLE NTIC INC.

DESCRIPTION	BY	APPR.	PROJECT NO.1 NJ21210	FILE NO: 1611
		70.70	DRAWING: EXLAYOUT	PLOT SIZE: 1" =250"
		-	DRAFTED BY: W.H. CICIO	DATE: 17JAN93
			CHECKED BY: B.A. BLUM	DATE: 17JAN93
			APPROVED BY: B.A. BLUM	DATE: 17JAN93
			_	_
	DESCRIPTION	DESCRIPTION BY	DESCRIPTION BY APPR.	DRAWING: EXLAYOUT DRAFTED BY: W.H. CICIO CHECKED BY: BA. BLUM

Public Service Electric & Gas PROPERTY BOUNDARY 1953 GENERAL TANK FIELD 1072 GENERAL TANK FIELD 1071 1055 1056 TI ESTIC IADE SUB SUB 1054 1062 REA SOLVEHT TA 226) (10"7) K FIEL (025) (1028) (1026) 1029) **∞ ∞ ∞** LOW Own TANK. DRUM HULDHO TANK FIELD 1068 1:19

MDC

CONSTABLE



GERAGHTY & MILLER, INC.

ivironmental Services

EXON.

EXXON COMPANY, U.S.A.

DRAWING CONFIDENTIAL: THIS DRAWING AND ALL INFORMATION CONTAINED THEREON WAS PREPARED BY GERACHTY & MILLER, INC. ON BEHALF OF EXXON COMPANY, U.S.A. AND SHALL REMAIN THE PROPERTY OF EXXON COMPANY, U.S.A. THIS INFORMATION SHALL NOT BE USED IN WHOLE OR IN PART WITHOUT THE FULL KNOWLEDE AND PRIOR WRITTEN CONSENT OF EXXON COMPANY, U.S.A.

SCALE VERIFICATION

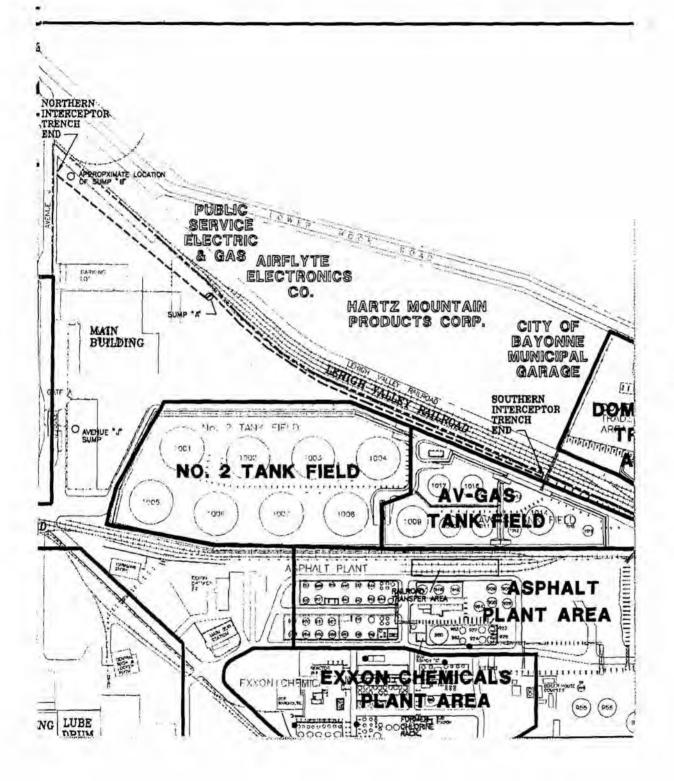
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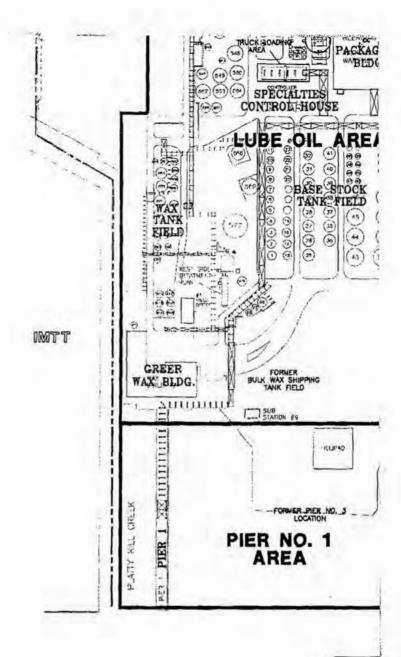
USE TO VERIFY FIGURE REPRODUCTION SCALE

URE

REV. NO.

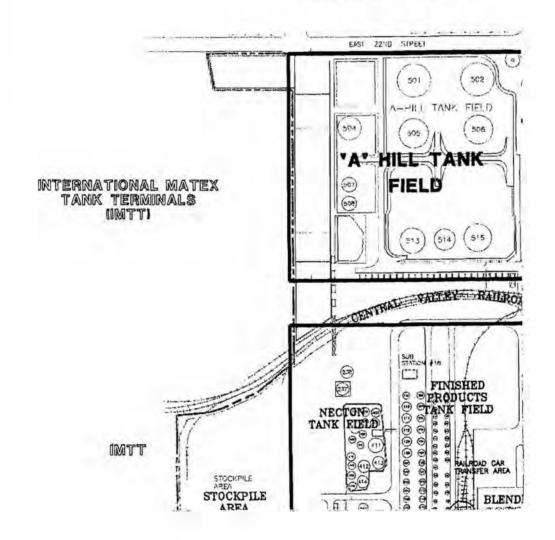
DATE







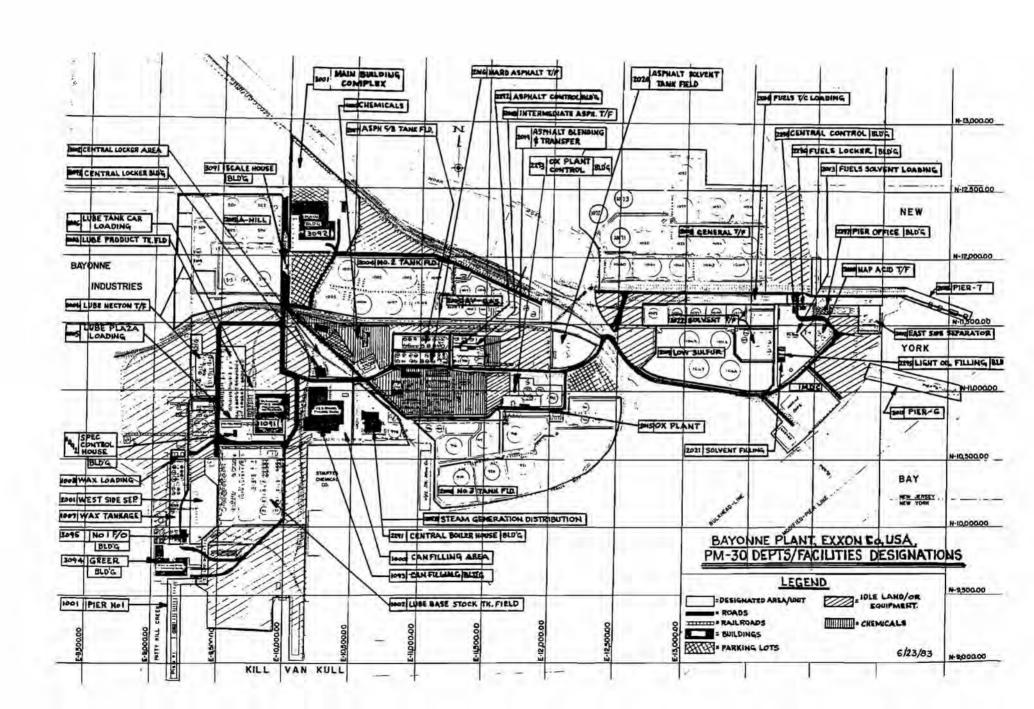
I.C.I. AMERICAS INC.



ATTACHMENT A-I

DRAWING OF BAYONNE PLANT, EXXON COMPANY, U.S.A., PM-30 DEPTS/FACILITIES DESIGNATION BY EXXON COMPANY, U.S.A.

JUNE 21, 1983



APPENDIX B

RAW MATERIALS AND PRODUCTS

APPENDIX B

CONTENTS

	Page
RAW	MATERIALS AND PRODUCTS
	TABLES
B-1.	General Products Produced at the Exxon Company Plant, Bayonne, New Jersey.
	<u>ATTACHMENTS</u>
B-I.	Partial List of Exxon Company, U.S.A. Products from Exxon Company, U.S.A. 1986. Memorandum from S. Webb. Re: MSD Distribution for Bayonne Plant, April 22, 1986.
B-II.	List of Hazardous Chemicals Known to be in the Workplace from Exxon Company, U.S.A. 1991. Bayonne Plant Hazard Communication Notebook, August 1991.

apendixb.toc

APPENDIX B

RAW MATERIALS AND PRODUCTS

This section was compiled to fulfill the requirements of the November 27, 1991 Administrative Consent Order (ACO), Appendix B, Section IIB, Item 2 and contains the lists of raw materials used and products made, past and present, including all pertinent dates, at the Exxon Company Plant, Bayonne, New Jersey. The lists provided in this section are presented in Table B-1 and Attachments B-I and B-II. The sources for the table and the attachmens are provided below.

- Table B-1: Exxon Company, U.S.A. 1973. Letter from E.B. Lanier to K.F. Birns, Principal Environmental Engineer, New Jersey Department of Environmental Protection. Re: Yearly Volume of the Various Products Handled by the Bayonne Plant over the Last 15 Years, April 11, 1973.
- Attachment B-I: Exxon Company, U.S.A. 1986. Memorandum from S. Webb.
 Re: MDS Distribution for Bayonne Plant, April 22, 1986.
- Attachment B-II: Exxon Company, U.S.A. 1991. Bayonne Plant Hazard Communication Notebook. August 1991.

Table B-1.	General Products at the Exxon Company Plant, Bayonne, New Jersey.
Product	
Asphalt	
Waxes	
Lubricating	Oils
Aviation Ga	soline
Petroleum S	Solvents
Fuel Oils	
Additives fo	r Lubricating Oil and Fuel Oil

Note: Compiled from Exxon Company, U.S.A., 1973, Memorandum of April 19, 1973.

tableb Ltab

ATTACHMENT B-I

Partial list of Exxon Company, U.S.A.
Products from Exxon Company, U.S.A. 1986.
Memorandum from S. Webb. Re: MDS Distribution for Bayonne Plant
April 22, 1986.

CHEMICAL LIST

FUELS

FORMULA NO.	PRODUCT
00039	Aviation Gas
00072	Turbo Fuel
00435	Petroleum Naphtha
00445	Cutback Naphtha
00518	Isom Feed
00537	Shoc Toluene
00540	Power-Former Feed
00599	Norpar 13
00602	Hexane
00603	Heptane
00605	Laktane
00607	VM&P Naphtha
00608	LOPS
00612	Norpar 15
00624	Varsol 18
00627	Varsol 1
00628	OMS
00631	Varsol 3
00636	Isopar K
00637	Isopar L
00640	Isopar H
00642	Isopar C
00643	Isopar E
00644	Isopar G
00650	Toluene
00651	Xylene
D0652	Aromatic 100
00653	Aromatic 150
00654	HAN
00573	EXXSOL D60
00680	EXXSOL D 80
00681	EXXSOL D 100
00686	EXXSOL D 110
00700	Kerosene
00753	H.O. 0.2 % 5
00787	260 Diesel
00804	Marine Diesel
00883	PGO
00908	IF 380
00920	IF 40
00921	IF 35
00923	1F 30
00924	IF 60
00925	IF 80
00926	IF 100
00927	IF 120
00928	F 150

CHEMICAL LIST

FUELS

(CONTINUED)

FORMULA NO.	PRODUCT
00929	IF 180
00930	IF 240
00931	IF 280
00932	IF 320
00942	#6 Fuel 0.3 % 5
00951	#6 Fuel 2.9 % 5
00956	Low Vis Plant Fuel
00958	#6 Fuel 2.2 % 5
00968	#6 Fuel 3.5 % 5 Bunker
00969	#6 Fuel 2.8 % 5
00970	Heavy Aromatic S Oil
00975	#6 Fuel 2.4 % 5
00978	#6 Fuel 2.5 % 5
00993	Carbon Black
02053	XD-3 30
02201	De Mar XT
07514	Slop Recycle Oil

(SPECIALTIES) LUBES

FORMULA NO.	PRODUCT
01125	Spinesstic 38
01173	Teresstic 33
01174	Teresstic 43
01175	Teresstic 47
01176	Teresstic 52
01177	Teresstic 56
01180	Teresstic 65
01182	Teresstic 85
01183	Teresstic 100
01184	Teresstic 120
01185	Teresstic 140
01203	Tro-Mar T 56
01208	Tro-Mar T 56 EP
01209	Turbine Lub
01217	Teresstic N 75
01229	Teresstic N 86
01241	200 Vis Solv Neutral
01243	150 Vis Solv Neutral
01247	325 Vis Solv Neutral
01253	450 Solv Neutral
01254	600 Vis Solv Neutral
01254	SAE 30 Base Stock
01258	SAE 40 Base Stock
01278	
	150 Solv Neut 95 V
01303	Faxam 35
01305	Faxam 22
01309	Faxam 50
01331	Nuto H 32
01333	Nuto H 44
01336	Nuto H 48
01337	Nuto H 54
01339	Nuto H 64
01343	Nuto H 100
01365	100 Vi LP Solv Neut
01366	150 Vi LP Solv Neut
1367	200 Vi LP solv Neut
01380	Necton 37
01383	Necton 40
01385	Necton 45
01390	Necton 60
01394	Necton 78
01399	Tro-Mar as 65
01400	Tro-Mar 65
01407	Iso Sol Neutral L PLS
01408	150 Solvent Neutral



(SPECIALTIES) LUBES

(CONTINUED)

FORMULA NO.	PRODUCT
01409	150 Sol Neut LP HI S
01411	600 Neutral High Sul
01413	Bright Stock HS
01441	Esstic 42
01443	Esstic 50
D1445	Esstic 65
01471	Coray 22
01472	coray 32
01473	Coray 46
01474	Coray 100
01475	Coray 150
01476	Coray 220
01480	Faxam 15
01481	Faxam 22
01482	Faxam 46
01490	1490 Motor Dil 20
01491	1491 Motor Dil 30
01502	Coray 40
01503	Coray 42
01505	Coray 45
01507	Coray 50
01509	Coray 55
01514	Coray 65
01518	Coray 80
01534	1534 Displacement ST
01688	Arox EP 65
01830	Univolt 33-X
01830	Univolt 33-X
01831	Univolt N 61
01906	Uniflo
01907	Uniflo 10W-30
01908	Extra MO 10W-20W-30
01909	Exxon Extra low-40
01911	Extra MO 20W-40 Exp
01914	1914 MD 10W-20W-30
01933	1933 Automatic Trans
01934	1934 ATF
01940	1940 Chrysler ATF
01941	Fleet 30
01946	Aquaglide
01952	1952 MD 20W-20W-40
D1956	Exxon ATF

(SPECIALTIES) LUBES

(CONTINUED)

FORMULA NO.	PRODUCT
D1973	1973 Dil
01975	1975 ATF
01983	Torque Fluid 56
01994	Torque Fluid 47
02011	Xon Plus MO 20W-20
02012	Xon Plus MO 30
02012	Xon Plus MO 30
02013	Xon Plus MO 40
02025	2025 Mil_R SF 20W_20
02026	2025 Mil-B SE 20W-20 2026 Mil-B SE 30
02027	2027 Mil-B SE 40
02038	Exxon Hvy Duty 10W
02039	Exxon Hvy Duty 30
02040	Exxon Hvy Duty 40
02041	Exxon Hvy Duty 15W40
02043	2043 Motor Oil 20W20
02048	XD-3 Extra 30
02050	Mil-8 MO 20W-40
02051	XD-3 Low
02052	XD-3 20W-20
02053	XD-3 30
02054	XD-3 40
02055	2055 Supp 1 MO 10W
02065	XD-3 Extra 15W-40
02067	2067 Motor Oil 15W40
02068	HDX Plus 10W
02069	HDX Plus 20W-20
02070	HDX Plus 30
02071	HDX Plus 40
02089	MO Displ
02173	Estor G 40
02201	2201 Diesel Lube Oil
02202	2202 Diesel Lube
02203	2203 Diesel Lube Oil
02216	Diesel Lube Oil
02218	Tro-Mar 5D 30
02219	Tro-Mar SD 40
02231	Tro-Mar 5 95
02233	Tro-Mar SV 100
02255	2255 MIL-C Motor Oil 10W
02257	2257 MIL-C Motor Oil 30
02258	2258 Mil-C Motor Dil 40
02259	2259 Motor Dil 15W4D
	2263 Motor Dil 30
02265	2265 Motor Dil 15W4D
02267	Tromar SR 30
02268	Tromar SR 40

(SPECIALTIES) LUBES

(CONTINUED)

j.

FORMULA NO.	PRODUCT
02273	Tro-Mar SRE 30
02274	Tro-Mar SRE 40
02317	Aviation Oil 100
02327	Av Oil EE 65
02328	Av Oil EE 80
02329	Av 0il EE 100
02330	Av Oil EE 120
02507	150/160 Sol Ext Brig
02561	2600 Vis Cyl Oil
02576	Cylesstic 300
02610	Cylesstic Tk 140
02613	Cylesstic Tk 210
02626	Canthus 181
02627	Canthus 210
02970	Zerice 45
02971	Zerice 50
02972	Zerice 52
03068	Telura 415
03077	Telura 321
03078	Telura 343
03079	Telura 407
03081	Telura 401
03082	Telura 323
03083	Telura 417
03088	Telura 662
03090	Telura 613
03091	Telura 619
03106	Instrument Oil
03127	Univis J 43
03131	Univis J 58
03146	3146 Hydraulic Oil B
03147	3147 Hydraulic Oil B
03200	Mentor 28
03228	Acto 630
03261	White Oil Base 75P
03296	Caloria HT
03322	Flexon 641
03334	3334 Process Oil
03335	Flexon 845
03341	Flexon 680
03389	Flexon 895
03442	Orchex 796
03732	3732 Roll Oil
03820	Dortan N14
03853	Sulfurized Base 12
03894	Lector 45
03501	Ref Wax Grav C 0877

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(SPECIALTIES) LUBES

(CONTINUED)

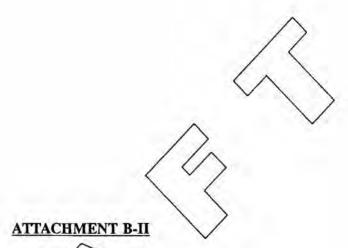
FORMULA NO.	PRODUCT
03502	Ref Wax Grav C 0877
03503	Ref Wax Grav C 0877
03504	Ref Wax Grav C 0877
03506	Ref Wax Grav C 0877
03519	Ref Wax Grav C 0877
03525	Ref Wax Grav C 0877
03648	3648 Slack Wax
03650	Slk Wax Grav C 0877
03680	Ref Wax Grav C 0877
05373	Gear Oil
05374	Spartan EP-320
05375	Spartan EP-460
05430	Gear Oil ST 90
05475	Gear Oil GX Low-90
05478	Gear Oil GX 140
05485	Gear Oil

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CHEMICAL LIST

(ASPHALT)

00445	Cubbank North
DD624	Cutback Naph
00824	Varsol 18 Kero
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
07001	Asphalt
07002	Asphalt
07004	Asphalt
07006	7006 CB
07020	Asphalt
07021	Asphalt
07022	Asphalt
07024	Aspha1t
07037	Asphalt
07052	Asphalt
07057	Asphalt
07107	7107 Ox
07110	7110 Asphalt
07119	AC 25
07124	Asphalt
07125	140/160
07131	Asphalt
07132	7132 SP
07152	Asphalt
07166	Asphalt
07185	AC 40
07201	Asphalt W/Add
07202	Asphalt W/Add
07204	Asphalt W/Add
07220	Asphalt W/Add
07221	Asphalt W/Add
07222	Asphalt W/Add
07224	Asphalt W/Add
63296	Caloria HT 43
	2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -



List of Hazardous Chemicals Known to be in the Workplace From: Exxon Company, U.S.A. 1991. Bayonne Plant Hazard Communication Notebook. August 1991. 15pp.

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	WARNING CODE	PLANT	FURINO
PRODUCT	FORMULA	PRODUCT DESCRIPTION Acidless Tallow #105 Oleic Acid Acetylene Argon Alox 1689 Alox 2191E-30 Alox 2291E Arsenal Herbicide Kling Beta-Lv Barcrobe Bio Barrier Pine D Hycoty Floor Finish Maverick P.S.B. Polymer Spray Buff Relkem 99 Relkem "0" Super Bowlaway Super Strip 340-2 Antifreeze Esso Antifreeze Esso Antifreeze Esso Antifreeze Esso Antifreeze Esso Antifreeze Lube Oil Additive OLOA 2690 Oronite Lube Oil Additive OLOA 2690 Oronite Lube Oil Additive OLOA 2725CX OLOA 9725CX OLOA 972	Acme Hardesty Acme Hardesty Airco Welding Alox Corp. Alox Corp. Alox Corp. Alox Corp. American Cyanamid AZS Corp. Barrier Ind. Corp. BASF Corp Baser-Col. Inc. Chevron Chevron Chevron Chevron Chevron Chevron Chevron Citaa-Geigy Citaa-		SPECIALTIES	FURING
		Oil Blue B Liquid Dye Oil Red B Liquid Tyzor TBT Titanate Naphtha	Dupont Dupont Oupont	DF1 DF8 DF7	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	:
	Sample Sample 10425 30702 30712 30813 30822 31220 75010 77413 79576 79810 80020 80025 80047	Maphtha ECA 13073 ECA 13028 Ethylene Glycol ECA 12834 ECA 12846 ECA 11998 ECA 11700A ECA 13934 ACRA 500 Breaxit 413 Breaxit 413 Breaxit 9576 Jayfloc 810 Paraflow 149 ECA 9368	ECA	N/A CE1 W8 CE1 CE3 CE3 CC3 CC3 CC3 CC3 CC7 N/A N/A	SPECIALTIES	
						-1-

ATTACHMENT B-II

List of Hazardous Chemicals Known to be in the Workplace From: Exxon Company, U.S.A. 1991. Bayonne Plant Hazard Communication Notebook. August 1991. 15pp.

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
131624 55000 86061 3333296 170011 170021 170060 170206 170211 170241 170370	80159 80384 80458 80459 80464 80555 80557 80690 80955 81153 81157 81286 81317 81320 81339 81358 81418 81418 81450 81856 81856 81816 81856 81856 81856 81856 81856 81856 81856 81856 81963 82061 82757 82931 82510 82757 82931 83442 83543 8349 83442 83543 83585 83991 91750 80955000 80955001 89720028	ECA 13112 Paratone 716 ECA 12823 ECA 12824 Paranox 24 Paranox 16 Paranox 205 Paraflow 385 ECA 9133 ECA 10017 ECA 9680 ECA 10022 ECA 10010 Paranox 106 Paranox 105 Paranox 105 Paranox 105 ECA 10409 ECA 10409 ECA 10429 Paranox 206 ECA 10017 Paranox 15 Paratone 816 Paranox 15 Paratone 856 ECA 1124 Paranox 26-1-59 ECA 10007 Paranox 30 ECA 8515 Paranox 160 ECA 8509 Paranox 26-1-59 ECA 10007 Paranox 30 ECA 8515 Paranox 160 ECA 8509 Paranox 30 ECA 8515 Paranox 160 ECA 8991 Jayflex 010P-E ECA 7931 Dayflex 010P-E ECA 7935 Paraflow 385 Escorene H0 98568A Plastolein 9360A Bishydroxethyl Dimerate Emersol 260 Oleic Acid Ethyl Antioxidant 703 HiTec 370 HiTec 4702 HiTec 4702 HiTec 4702 HiTec 4863 HiTec 470 HiTec 4863 HiTec (R) 005 Performance Additive Tetraethyl Lead Polybilt & XCS Series Polymers Polymer Modified Asphalt Varsol 18 Kerosene #6 Fuel 0.3% S Exx Print 990 Calorio HA 43 RC 70 CB Asphalt MC 30 CB Asphalt MC 70 CB Asphalt MC 250 CB Asphalt MC 30 CB Asphalt MC 70 CB Asphalt MC 70 CB Asphalt MC 250 CB Asphalt MC 30 CB Asphalt	ECA	N/A N/A CEEE CEEE N/A N/A CEEE N/A CEEE N/A CEE N/A CEE N/A CEE N/A CEE N/A CEEE N/A CEE	SPECIALTIES SPECIA	

PRODUCT	FORMULA	PRODUCT DESCRIPTION		SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
170460 170520 170570 171070 171100 171190 171241 171250 171270 171311 171320 171520 171540 171680 171680 171690 171770	07046 07052 07057 07107 07110 07119 07124 07125 07127 07131 07132 07152 07154 07166 07168 07169	PRODUCT DESCRIPTION 7046 OD Asphalt 7052 OD Asphalt 7107 Roofers Flux 7110 Asphalt AC 2.5 Asphalt 160/180 Pen Emulsion Flux 140/160 Pen Emulsion Flux AC-5 Asphalt 7131 Roofers Flux 7132 Special Asphalt AC-10 Asphalt AC-10 Asphalt AC-20 Asphalt AC-20 Asphalt AC-20 Asphalt AC-20 Asphalt AC-30 VA Additive Asphalt Expave HP-50 AC-30 VA Additive Asphalt AC-40 Asphalt AC-40 Asphalt AC-40 Asphalt AC-50 CB Additive Asphalt AC-50 CB Additive Asphalt AC-50 CB Additive Asphalt AC-70 CB Additive Asphalt AC-70 CB Additive Asphalt AC-70 CB Additive Asphalt AC-800 CB A	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA		DC5 DC4 DC4 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	ASPHALT	
171780 171850 171860 171950 172010 172022	07178 07185 07186 07195 07201 07202 07204	AC-30 P Asphalt AC-40 Asphalt AC-40 Asphalt AC-40 Additive Asphalt 160/175 Special Asphalt RC 70 C8 Additive Asphalt RC250 C8 Additive Asphalt	EUSA EUSA EUSA EUSA EUSA EUSA		C4 C3 C3 OF2 OF2	ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT	
172041 172211 172221 172241 173070 929215	07204 07221 07222 07224 07307 29215	RC800 CB Additive Asphalt MC 70 CB Additive Asphalt MC 200 CB Additive Asphalt MC 800 CB Additive Asphalt 7307 Shingle Saturant Naphtha with Benzene & Hexane	EUSA EUSA EUSA EUSA EUSA		0C3 0C3 0C3 C3	ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT	
111000 113000 113040 120400 124000 124000 127021 25000 26009 30200 30200 30201 040000 132544 133545 133551 133561 133562 133563 133568 133578 134584 134586 133586 133586 133592 133592	00029 00039 00040 00072 00073 00073 00079 00081 00290 00380 00380 00380 00380 00380 00380 00557 00557 00556 00557 00568 00578 00586 00586 00590 00591 00592 00592 00593 00594 00599 00599	Naphtha Cracked Gas Oil Aromatic Tar S-2 or Carbon Black Oil (Process Gas Oil) Virgin Gas Oil Unleaded Gasoline Tank Bottoms Leaded Gasoline Tank Bottoms Leaded Gasoline Tank Bottoms Slop Oil Aviation Gasoline 80 Aviation Gasoline 100 Turbo Fuel A Jet Fuel Grade JP-4 Jet Fuel Grade JP-4 Jet Fuel Grade JP-8 Jet Fuel Grade JP-8 Jet Fuel JP-8 W/FSII ADD Exxon Unleaded Gasoline CORS MFPA Unleaded Reg Exxon Leaded - MT8E Exxon LR-Contains Min 11.0% MTBE Exxon LR-Contains Min 12.7% MTBE M-85 Motor Oil S44 Solvent EXX-Print 74D EXX-Print 78D EXX-Print 189D EXX-Print 189D EXX-Print 189D EXX-Print 380 Exxon-Liquid Candle Oil S84 Solvent Heptane RX Exxsol Heptane 2024 Naphtha 2429 Naphtha 2592 Solvent Syntrel 350 Norpar 10 Mixed Solvent Interface Norpar 12 Norpar 13 601 Solvent	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA		DEF3 DEF3 DEF3 DEF3 DEF3 DEF3 DEF3 DEF3	FURLUS SELES	

PRODUCT	FORMULA	PRODUCT DESCRIPTION Hexane Isohexane Naphtha Heptane CF 195 Naphtha Laktane CF 195 Naphtha 608 Paraffin Solvent Low Odor Paraffin Solvent Low Odor Paraffin Solvent Exxsol Hexane Norpar 15 1028 Naphtha Norpar 12 Special Norpar 13 Special Varsol 18 Varsol 1 0dorless Mineral Spirits Varsol 18 Varsol 1 Sopar M Isopar K Isopar M Isopar K Isopar L Isopar E Isopar G Toluene Xylene Aromatic 100 Aromatic 150 HAN 857 Aromatic 200 Charcoal Lighter 120 Exxsol D 80 Exxsol D 100 Ex		SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
133130	00602	Hexane	EUSA		DEF2	FUELS	
133602	00602	Isohexane Naphtha	EUSA		DEF2	FUELS	
133120	00603	Heptane	EUSA		DEF1	FUELS	
133604	00604	CF 196 Naphtha	EUSA		DF3	FUELS	
133140	00605	Laktane	EUSA		OF1	FUELS	
133606 133060	00606	UMED Washtha	EUSA		053	FUELS	
131708	00608	608 Paraffin Solvent	FIICA		DCI	FUELS	
131608	00608	Low Odor Paraffin Solvent	EUSA		DC1	FUELS	
135608	00608	Low Odor Paraffin Solvent	EUSA		DC1	FUELS	
133611	00611	Exxsol Hexane	EUSA		DEF2	FUELS	
133612	00612	Norpar 15	EUSA		N/A	FUELS	
133613 133615 133616	00613	1028 Maphtha	EUSA		DEF3	FUELS	
133515	00616	Norman 13 Special	EUSA		DCI	FUELS	
131624	00624	Varsol 18	FIISA		OCI	FUELS FUELS	
131030	00627	Varsol 1	EUSA		DC1	FUELS	
134628	00628	Odorless Mineral Spirits	EUSA		DC1	FUELS	
131043	00631	Varsol 3	EUSA		DC1	FUELS	
133469 133468	00635 00635	Bayol 35	EUSA		DC1	FUELS	
133467	00635	Isopar M	EUSA		DCI	FUELS	
133645	00637	Isonar 1	FUSA		001	FUELS FUELS	
133639	00639	Isopar V	EUSA		N/A	FUELS	
133466	00640	Isopar H	EUSA		DC1	FUELS	
133642	00642	Isopar C	EUSA		DEF1	FUELS	
133463	00643	Isopar E	EUSA		DFI	FUELS	
133464	00644	Isopar G	EUSA		DC1	FUELS	
132010 132020	00650 00651	Yulene	EUSA		DF1	FUELS	
132030	00652	Acomatic 100	FIISA		DC1	FUELS	
132040	00653	Aromatic 150	EUSA		DC1	FUELS	
132050	00654	HAN 857	EUSA		OC1	FUELS	
132655	00655	Aromatic 200	EUSA		N/A	FUELS	
133658	00558	Charcoal Lighter 125	EUSA		DC1	FUELS	
133663 133673	00663 00673	Charcoal Lighter 120	EUSA		DC1	FUELS	
133680	00680	Exxsul D 80	FUSA		DC1	FUELS	
133681	00681	Exxsol D 100	FUSA		N/A	FUELS	
133686	00686	Exxsol D 110	EUSA		N/A	FUELS	
134686	00686	686 Solvent	EUSA		H/A	FUELS	
133688	00688	CF 181 Naphtha	EUSA		DEF3	FUELS	
55000 59998	00700	Kerosene	EUSA		002	FUELS	
59999	00739	Interface/Emulsion	FUSA		DEF3	FUELS	
229999	00739	Slop Oil	FUSA		DEF3	FUELS	
63010	00753	Heating Oil 0.2% S	EUSA		DC2	FUELS	
72700	00787	Exxon Diesel 2	EUSA		DC2	FUELS	
72789	00789	Marine Gas 011	EUSA		DC2	FUELS	
75001	00804 00883	Marine Diesel Oil	EUSA		DCS	FUELS	
85883 82444	00883	Intermediate Fuel #420	EUSA		DC3	FUELS	
82200	00908	Intermediate Fuel #40	FIISA		DC3	FUELS	
82440	00921	Intermediate Fuel #380	EUSA		DC3	FUELS	
82205	00923	Intermediate Fuel #30	EUSA		DC3	FUELS	
82210	00924	Intermediate Fuel #60	EUSA		DC3	FUELS	
82230	00000	tirearmediate idei soo	CODA			FUELS	
82320	00926	Intermediate Fuel #100	EUSA		DC3	FUELS	
82330 82410	00927 00928	Intermediate Fuel #120 Intermediate Fuel #150	EUSA EUSA		DC3	FUELS FUELS	
82420	00929	Intermediate Fuel #180	EUSA		DC3	FUELS	
82450	00930	Intermediate Fuel #240	EUSA		DC3	FUELS	
82931	00931	Intermediate Fuel #280	EUSA		0C3	FUELS	
82470	00932	Intermediate Fuel #320	EUSA		DC3	FUELS	
86024	00939	#6 Fuel 2.1% S	EUSA		DC3	FUELS	
86061	00942	65 Fuel 0.3% S	EUSA		DC3	FUELS	
85050 86045	00948	#6 Fuel Stock #6 Fuel 1.0% S	EUSA EUSA		DC3	FUELS FUELS	
86020	00950 00951	16 Fuel 2.9% 5	EUSA		003	FUELS	
86025	00958	#6 Fuel 2.2% S	EUSA		DC3	FUELS	
86064	00962	Heavy Aromatic Fuel 011	EUSA		0C3 0C3	FUELS	
86037	00968	#6 Fuel 3.5% S (8FD)	EUSA		DC3	FUELS	
86029	00969	#6 Fuel 2.8% S	EUSA		DC3	FUELS	

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	WARNING CODE	PLANT LOCATION	FURING
86026 86975	00973 00975	#6 Fuel 1.5% S #6 Fuel 2.4% S #6 Fuel 2.5% S Unbranded 100 Solvent Neutral	EUSA EUSA	DC3 DC3	FUELS	
86978	00978	#6 Fuel 2.5% S	EUSA	DC3	FUELS	
311465	01465	Unbranded 100 Solvent Neutral	EUSA	N/A	FUELS	
211730	01730	XO-3 30	EUSA		FUELS	
212053	02053	X0-3 30	EUSA	N/A	FUELS	
362216 352217	02216	OF-MAR 13	EUSA EUSA	N/A N/A	FUELS	
362225	02225	DE-MAR 17	EUSA	csi	FUELS	
902473	02473	XD-3 Extra 40	EUSA	N/A	FUELS	
333060	03060	EXX-Print 990	EUSA	C3	FUELS FUELS	
315708	03064	Unbranded 100 Solvent Neutral XO-3 30 XO-3 30 DE-MAR MOX DE-MAR 13 DE-MAR 17 XD-3 Extra 40 EXX-Print 990 EXX-Print 776 EXXMAR 24TP 40 RC 250 CB Asphalt 7107 Roofers Flux 140/160 Pen Emulsion Flux AC-20 Asphalt	EUSA EUSA	N/A N/A	FUELS	
170021	07002	RC 250 CB Asphalt	EUSA	DF2	FUELS	
171070	07107	7107 Roofers Flux	EUSA	C3	FUELS	
171250	07125	140/160 Pen Emulsion Flux	EUSA	C3	FUELS	
171660 171850	07166 07185	AC-20 Asphalt AC-40 Asphalt	EUSA EUSA	C3 C3	FUELS	
929215	29215	Naphtha with Benzene & Hexane	EUSA		FUELS	
131524	00624	Varsol 18	EUSA	DC1 DC1	SPECIALTIES SPECIALTIES	
133469	00635	Bayol 35	EUSA	DC1	SPECIALTIES	
133468 132050	00635 00654	Maphtha with Benzene & Hexane Varsol 18 Bayol 35 Isopar M HAM 857 Spinesstic 10 Spinesstic 22 Humble Hydraulic H 32 Humble Hydraulic H 46 Humble Hydraulic H 100 Humble Hydraulic H 100 Humble Hydraulic M 32 Humble Hydraulic M 32 Humble Hydraulic M 36 Humble Hydraulic M 68 Humble Hydraulic M 68 Humble Hydraulic M 68 Humble Hydraulic M 100 Teresstic W 150 Teresstic W 220 1170 Turbine 0il Concentrate	EUSA EUSA	DC1 DC1	SPECIALTIES SPECIALTIES	
372034	01123	Spinesstic 10	EUSA	N/A	SPECIALTIES	
372038	01125	Spinesstic 22	EUSA	N/A	SPECIALTIES	
341150	01150	Humble Hydraulic H 32	EUSA	N/A	SPECTALTIES	
341151 341152	01151 01152	Humble Hydraulic H 46	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
341153	01153	Humble Hydraulic H 100	FUSA	N/A N/A	SPECIALTIES	
341160	01160	Humble Hydraulic M 32	EUSA	N/A	SPECIALTIES	
341161	01161	Humble Hydraulic M 46	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
341162	01162	Humble Hydraulic M 68	EUSA	N/A	SPECIALTIES	
341163 376070	01163 01168	Toposetic V 150	EUSA EUSA	N/A	SPECIALTIES	
376071	01169	Teresstic W 220	EUSA		SPECIALTIES	
351170 341173	01170	1170 Turbine Oil Concentrate	EUSA	N/A	SPECIALTIES	
341173	01173	1170 Turbine Oil Concentrate Teresstic 33 Teresstic 32 Teresstic 46 Teresstic 68 Teresstic 77 Teresstic 100 Teresstic 150 Teresstic 220 Teresstic 320 Teresstic 320 Teresstic 460 Tro-Mar T Tro-Mar T Tro-Mar T EP	EUSA	N/A	SPECIALTIES	
376000 376000	01174	Teresstic 32	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
376005	01175	Teresstic 46	EUSA	N/A	SPECIALTIES	
376010	01176	Teresstic 68	EUSA	N/A	SPECIALTIES	
376020	01177	Teresstic 77	EUSA	N/A	SPECIALTIES	
376045 376065	01180 01182	Teresstic 100	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
341183	01183	Teresstic 220	EUSA	N/A	SPECIALTIES	
341184	01184	Teresstic 320	EUSA	N/A	SPECIALTIES	
341185	01185	Teresstic 450	EUSA	N/A	SPECIALTIES	
338010 338070	01203 01207	Tro-Mar T 100 FP	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
338060	01208	Tro-Mar T EP	EUSA	N/A	SPECIALTIES	
341209	01209	1209 Turbine Lubricant	EUSA	N/A	SPECIALTIES	
376051	01217	Teresso N 150	EUSA	N/A	SPECIALTIES	
376050	01217	Teresstic N 150	EUSA	N/A	SPECIALTIES	
341222 371225	01222	Aracar 55 Teresstic N 100	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
371226	01226	Teresstic N 460	EUSA	N/A	SPECIALTIES	
371227	01228	Teresstic N 320	EUSA	N/A	SPECIALTIES	
371230 371229 311234	01229	Teresso N 220	EUSA	N/A	SPECIALTIES	
3/1229	01229	Teresstic N 220 75 Solvent Neutral	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
311241	01241	200 Solvent Neutral	EUSA	N/A	SPECIALTIES	
311243 311247	01243	150 Solvent Neutral	EUSA	N/A	SPECIALTIES	Ž.
311247	01247	325 Solvent Neutral	EUSA	N/A	SPECIALTIES	K.
311248 311253	01248	370 Solvent Neutral	EUSA	N/A	SPECIALTIES SPECIALTIES	
311254	01253 01254	450 Solvent Neutral 600 Solvent Neutral	EUSA EUSA	N/A	SPECIALTIES	
311257	01257	500 Solvent Neutral	EUSA	N/A	SPECIALTIES	
311278 311305 311309	01257 01278	150 Solvent Neutral 88 VI	EUSA	N/A	SPECIALTIES	
311305	01305	100 Pale Paraffin	EUSA	N/A	SPECIALTIES SPECIALTIES	
363005	01309	240 Pale Paraffin Nuto H 5	EUSA EUSA	N/A N/A	SPECIALTIES	
363000	01331 01333	Nuto H 15	EUSA	N/A	SPECIALTIES	6
363010	01335	Nuto H 32	EUSA	N/A	SPECIALTIES	

PRODUCT	FORMULA	PRODUCT DESCRIPTION Nuto H 46 Nuto H 58 Nuto H 100 Nuto H 150 1351 Hydraulic Oil 1354 Hydraulic Oil Univis N 15 Univis N 15 Univis N 22 Univis N 32 Univis N 46 Univis N 100 1361 Detergent Hydraulic Oil 100 LP Solvent Neutral 150 LP Solvent Neutral 150 LP Solvent Neutral 1367 Base Oil Necton 37 75 Sol Ext Coastal Pale 100 Sol Ext Coastal Pale 100 Sol Ext Coastal Pale Necton 40 Necton 45 200 Sol Ext. Coastal Pale 300 Sol Ext. Coastal Pale 500 Sol Ext. Coastal Pale Necton 50 1391 Base Oil Necton 78 900 Sol Ext. Coastal Pale Tro-Mar AS 30 Tro-Mar 30 150 Solvent Neutral Low Sulfur 150 Solvent Neutral LP Hi Sulfur 150 Solvent Neutral High Sulfur	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO	
363012	01335	Nuto H 46	EUSA	N/A	SPECIALTIES		
363015	01337	Nuto H 58	EUSA	N/A	SPECIALTIES		
363020 363025	01339	Nuto H 150	FUSA	N/A	SPECIALTIES SPECIALTIES		
321351	01351	1351 Hydraulic 011	FUSA	N/A	SPECIALTIES		
361354	01354	1354 Hydraulic Oil	EUSA	N/A	SPECIALTIES		
351354	01354	1354 Hydraulic Oil	EUSA	N/A	SPECIALTIES SPECIALTIES		
321354 321354	01354 01354	1354 Hydraulic 011	EUSA	N/A	SPECIALTIES		
341355	01354	Univis N 15	FIISA	N/A	SPECIALTIES SPECIALTIES		
341355	01355	Univis N 15	EUSA	N/A	SPECIALTIES		
351355	01355	Univis N 22	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES		
341356 341357	01356	Univis N 32	EUSA	N/A	SPECIALTIES		
341359	01357 01359	Univis N 100	FUSA	N/A	SPECIALTIES SPECIALTIES		
321361	01361	1361 Detergent Hydraulic Oil	EUSA	N/A	SPECIALTIES		
311365	01365	100 LP Solvent Neutral	EUSA	N/A	SPECIALTIES		
311366	01366	150 LP Solvent Neutral	EUSA	N/A	SPECIALTIES		
311367 360037	01367 01380	Necton 37	FUSA	N/A	SPECIALTIES		
311380	01380	75 Sol Ext Coastal Pale	EUSA	N/A	SPECIALTIES SPECIALTIES		
311383	01383	100 Sol Ext Coastal Pale	EUSA	N/A	SPECIALTIES		
360040	01383	Necton 40	EUSA	N/A	SPECIALTIES		
360045 311385	01385 01385	Necton 45	EUSA	N/A	SPECIALTIES		
311386	01386	300 Sol Ext. Coastal Pale	FUSA	N/A	SPECIALTIES SPECIALTIES		
311390	01390	500 Sol Ext. Coastal Pale	EUSA	N/A	SPECIALTIES		
360060	01390	Necton 60	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES		
311391 360078	01391 01394	1391 Base 011	EUSA	9/4	SPECIALTIES		
311394	01394	900 Sol Ext. Coastal Pale	FUSA	N/A	SPECIALTIES		
361399	01399	Tro-Mar AS 30	EUSA	N/A	SPECIALTIES SPECIALTIES		
378065	01400	Tro-Mar 30	EUSA	N/A	SPECIALTIES		
311406	01406	150 Solvent Neutral Low Sulfur	EUSA	N/A	SPECIALTIES		
311407 311408	01407	150 Solvent Neutral Lr Low Sulfur	FUSA	N/A	SPECIALTIES SPECIALTIES		
311409	01409	150 Solvent Neutral LP Hi Sulfur	EUSA	N/A	SPECIALTIES		
311410	01410	600 Solvent Neutral Low Sulfur	EUSA	N/A	SPECIALTIES SPECIALTIES		
311411	01411	500 Solvent Neutral High Sulfur	EUSA	N/A	SPECIALTIES		
311412	01412	Bright Stock Low Sulfur	FUSA	N/A	SPECIALTIES SPECIALTIES		
340000	01441	Esstic 32	EUSA	N/A	SPECIALTIES		
340020	01443	Esstic 68	EUSA	N/A	SPECIALTIES		
340040	01445	Esstic 150	EUSA	N/A	SPECIALTIES		
341471 341472	01471	Coray 22	EUSA	N/A	SPECIALTIES SPECIALTIES		
341473	01473	Coray 46	EUSA	N/A	SPECIALTIES		
341474	01474	Coray 100	EUSA	N/A	SPECIALTIES		
341475	01475	Coray 150	EUSA	N/A	SPECIALTIES		
341476 341480	01475 01480	Coray 220	EUSA	N/A	SPECIALTIES SPECIALTIES		
341481	01481	Faxam 22	EUSA	N/A	SPECIALTIES		
341482	01482	Faxam 46	EUSA	N/A	SPECIALTIES		
341485	01485	Chain 011 D	EUSA		SPECIALTIES		
341486	01486	Chain 011 22 Chain 011 100	EUSA EUSA		SPECIALTIES SPECIALTIES		
341487 311490	01487 01490	Base 011 20	EUSA	DC2	SPECIALTIES		
311491	01491	Base 011 30	EUSA	DC2	SPECIALTIES		
311501	01501	85 Coastal Pale	EUSA	N/A	SPECIALTIES		
311502	01502	105 Coastal Pale	EUSA	N/A	SPECIALTIES		
311503 311505	01503 01505	150 Coastal Pale 225 Coastal Pale	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
311507	01507	300 Coastal Pale	EUSA	N/A	SPECIALTIES		
311509	01509	500 Coastal Pale	EUSA	N/A	SPECIALTIES		
311514	01514	750 Coastal Pale	EUSA	N/A	SPECIALTIES		
311518 311534	01518 01534	1200 Coastal Pale 1534 Displacement Stock	EUSA EUSA	N/A DC2	SPECIALTIES SPECIALTIES		
311535	01535	1535 Displacement Stock	EUSA	N/A	SPECIALTIES		
480000	01536	Mixed Lube Interface	EUSA	200	SPECIALTIES		
311537	01537	Used Motor 011	EUSA	244	SPECIALTIES		
211517 211618	01617 01618	Superflo High Performance 5V-30	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
211619	01619	Superflo High Performance 10V-30 Superflo High Performance 10V-40	EUSA	N/A	SPECIALTIES		
		Anna transfer of the same and said			20.200.000.000		

PRODUCT	FORMULA	PRODUCT DESCRIPTION Superflo High Performance 20W-50 Superflo High Performance 20W-20 Superflo High Performance 30 Superflo High Performance 30 Superflo High Performance 40 Superflo High Performance 50 Superflo SW-30 1637 Motor 0il SW-30 1638 Motor 0il 10W-30 Superflo 10W-40 Superflo 10W-40 Superflo 10W-40 Superflo 20W-50 1640 Motor 0il 30 Superflo SAE 30 1644 Motor 0il 30 Superflo SAE 40 Millcot K220 Arox EP 46 Arox EP 150 Arox EP 320 X0 10W 1718 Motor 0il 40 X0 30 1719 Motor 0il 10W X0-3 10W 1728 Motor 0il 10W X0-3 20W-20 1729 Motor 0il 20W-20 1730 Motor 0il 30 XD-3 40 1731 Motor 0il 40 X0-3 15W-40 X0-3 15W-40 X0-3 15W-40 X0-3 15W-40 X0-3 15W-40 X0-3 50 X0 10 X0 X	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION FL	JRINO .
211620	01620	Superflo High Performance 20W-50	EUSA	N/A	SPECIALTIES	
211621	01621 01622	Superflo High Performance 10W	EUSA	N/A	SPECIALTIES	
211623	01623	Superflo High Performance 20#-20	FUSA	N/A	SPECIALTIES SPECIALTIES	
211624	01624	Superflo High Performance 40	EUSA	N/A N/A N/A	SPECIALTIES	
211625	01625	Superflo High Performance 50	EUSA	N/A	SPECIALTIES SPECIALTIES	
211637	01637	Superflo SV-30	EUSA		SPECIALTIES	
231637 231638	01637 01638	1638 Motor 011 5W-30	FUSA		SPECIALTIES SPECIALTIES	
211638	01638	Superflo 10V-30	EUSA		SPECIALTIES	
231639	01639	1639 Motor 011 10W-40	EUSA		SPECIALTIES	
211639	01639	Superfla 10W-40	EUSA		SPECIALTIES SPECIALTIES	
231640 211640	01640	1640 Mater 011 20W-50 Superflo 20W-50	FUSA		SPECIALTIES	
231643	01643	1643 Motor 011 30	EUSA		SPECIALTIES SPECIALTIES	
211643	01643	Superflo SAE 30	EUSA		SPECIALTIES	
231644	01644	1644 Motor 011 40	EUSA		SPECIALTIES SPECIALTIES SPECIALTIES	
211644 356065	01644 01668	Millor Y220	FUSA	N/A	SPECIALTIES	
313000	01687	Arox EP 46	FUSA	N/A	SPECIALTIES	
313020	01688	Arox EP 150	EUSA	N/A	SPECIALTIES SPECIALTIES	
311690	01690	Arox EP 320	EUSA	N/A	SPECIALTIES	
231718	01716 01718	XD 10W	EUSA		SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	
211718	01718	XD 30	FUSA		SPECIALTIES	
231719 211719	01718 01719 01719	1719 Motor 0il 40	EUSA		SPECIALTIES SPECIALTIES	
211719	01719	XD 40	EUSA		SPECIALTIES	
211728 231728	01728	1778 Motor 011 100	EUSA		SPECIALTIES	
211729	01729	XD-3 20V-20	FUSA		SPECIALTIES	
211729 231729	01729	1729 Motor 011 20W-20	EUSA		SPECIALTIES	
231730	01728 01729 01729 01730	1730 Motor 011 30	EUSA		SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	
211731 231731	01731 01731	1731 Motor 011 40	EUSA		SPECIALTIES SPECIALTIES	
231732	01732	1732 Motor 011 15V-40	FUSA		SPECIALTIES	
211732	01732	XD-3 15W-40	EUSA		SPECIALTIES SPECIALTIES SPECIALTIES	
211733	01733	XD-3 10W-30	EUSA		SPECIALTIES	
231733 211773	01733 01733	1/33 Motor 011 10W-30	EUSA		SPECIALTIES SPECIALTIES	
231734	01734	1734 Motor 011 50	EUSA		SPECIALTIES	
211734	01734 01735	XD-3 50	EUSA	202	SPECIALTIES	
211735	01735	XD 10 W	EUSA	N/A	SPECIALTIES	
211736 211737	01736 01737	XD 20W-20	FIICA	N/A N/A	SPECIALTIES SPECIALTIES	
211738	01738	XD 40	EUSA	N/A	SPECIALTIES	
211739	01739	XD 50	EUSA	N/A	SPECIALTIES	
231740	01740	1740 Motor Oil 10W	EUSA	N/A	SPECIALTIES	
231741 231742	01741 01742	1741 Motor 011 20W-20	FUSA	N/A N/A	SPECIALTIES	
231743	01743	1743 Motor 011 40	EUSA	N/A	SPECIALTIES	
211774	01743 01744	XD-3 Extra 15V-40	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
211744	01744	Busgard Heavy Duty Eng. 011 30	EUSA	N/A	SPECIALTIES	
231748 211749	01748	Busgard Heavy Duty Eng. 011 40	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
231749	01749	1749 Heavy Duty Eng. 011 40	EUSA	N/A	SPECIALTIES	
211750 211751	01750	XD-3 10W	EUSA	N/A	SPECIALTIES	
211751	01751	XD-3 20W-20	EUSA	N/A	SPECIALTIES	
211752	01752 01753	XD-3 30 XD-3 40	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
211754	01754	XD-3 15W-40	EUSA	N/A	SPECIALTIES	
211775	01755	XD-3 Extra OW-30	EUSA	N/A	SPECIALTIES	
211755	01755	XD-3 10V-30	EUSA	N/A	SPECIALTIES	
231760 231761	01760 01761	1760 Motor 011 10W 1761 Motor 011 20W-20	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
231762	01762	1762 Motor 011 30	EUSA	N/A	SPECIALTIES	
231763	01763	1763 Motor 011 40	EUSA	N/A	SPECIALTIES	
231764	01764	1764 Motor 011 15W-40	EUSA	N/A	SPECIALTIES SPECIALTIES	
231765 211770	01765 01770	1765 Motor 011 10W-30 XD-3 Extra 10W	EUSA EUSA	N/A N/A	SPECIALTIES	
211771	01771	XD-3 Extra 20W-20	EUSA	N/A	SPECIALTIES	
211772	01772	XD-3 Extra 30	EUSA	N/A	SPECIALTIES	
231780	01780	1780 Mator 011 10W	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
231781	01781	1781 Motor 011 20W-20	EUSA	W.V.	PLECTUTIES.	

				HAZARD WARNING	PLANT
PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	CODE	LOCATION FURINO
231782 231783	01782 01783	1782 Motor Oil 30 1783 Motor Oil 40 1784 Motor Oil 15W-40 Univalt 60	EUSA Eusa	N/A N/A	SPECIALTIES SPECIALTIES
231784	01784	1784 Motor Oil 15W-40	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
331830 331831	01830 01831	Univolt N 61	FUSA	N/A	SPECIALTIES
331836	01836	Univolt 80	EUSA	N/A	SPECIALTIES
381386	01836	1836 Insulating Oil	EUSA	N/A	SPECIALTIES SPECIALTIES
212214 211909	01908 01909	Exxon Extra Motor UII 10W-3U Exxon Extra Motor Oil 10W-40	EUSA FLIS A	N/A N/A	SPECIALTIES
211911	01911	Exxon Extra Motor Oil 20W-40	EUSA	N/A	SPECIALTIES
211913	01913	Superflo Supreme Perform 10W-30	EUSA	N/A	SPECIALTIES SPECIALTIES
212400 211917	01914 01917	1914 Motor 011 10W-30 Superflo High Perf 5W-30	EUSA FIIS A	N/A N/A	SPECIALTIES
211918	01918	Superflo High Perf. 10W-30	EUSA	N/A	SPECIALTIES
211919	01919	Superflo High Perf. 10W-40	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
211920 211921	01920 01921	Superflo High Perf. 208-30	EUSA	N/A	SPECIALTIES
211922	01922	Superflo High Perf. 20W-20	EUSA	N/A	SPECIALTIES
211923	01923	Superflo High Perf. 30	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
211924 211925	01924 01925	Superflo High Perf. 40	EUSA	N/A	SPECIALTIES
211926	01926	Superflo Supreme Perform 10W-40	EUSA	N/A	SPECIALTIES
211932	01932	1932 Automatic Transmission Fluid	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
213933 211934	01933 01934	1934 Automatic Transmission Fluid	EUSA	N/A	SPECIALTIES
211938	01938	1783 Motor 011 40 1784 Motor 011 15W-40 Univolt 60 Univolt 80 1836 Insulating 011 Exxon Extra Motor 011 10W-30 Exxon Extra Motor 011 10W-40 Exxon Extra Motor 011 10W-40 Superflo Supreme Perform 10W-30 1914 Motor 011 10W-30 Superflo High Perf. 5W-30 Superflo High Perf. 10W-30 Superflo High Perf. 10W-40 Superflo High Perf. 10W-0 Superflo High Perf. 20W-20 Superflo High Perf. 30 Superflo High Perf. 30 Superflo High Perf. 30 Superflo High Perf. 50 Superflo High Perf. 50 Superflo High Perf. 50 Superflo Supreme Perform 10W-40 1932 Automatic Transmission Fluid 1933 Automatic Transmission Fluid 1934 Automatic Transmission Fluid 1938 Automatic Transmission Fluid 1938 Automatic Transmission Fluid	EUSA	N/A	SPECIALTIES
211941 231946	01941 01946	1941 Chrysler ATF	EUSA FIISA	N/A DC1	SPECIALTIES SPECIALTIES
231947	01947	1947 2-Cycle Oil	EUSA	DC1	SPECIALTIES
211947	01947	Superflo 2-Cycle Oil	EUSA	DC1 N/A	SPECIALTIES SPECIALTIES
212002 213025	01952 01956	Fryng ATE	FUSA	N/A	SPECIALTIES
211957	01957	Superflo ATF	EUSA	N/A	SPECIALTIES
211958	01958	1938 Automatic Transmission Fluid 1941 Chrysler ATF Aquaglide 1947 2-Cycle Oil Superflo 2-Cycle Oil 1952 Motor Oil 10W-40 Exxon ATF Superflo ATF Superflo ATF-M Busgard TF	EUSA FIISA	N/A N/A	SPECIALTIES SPECIALTIES
211970 211973	01970 01973	1973 Automatic Transmission Fluid	EUSA	N/A	SPECIALTIES
211975	01975	1975 Automatic Transmission Fluid	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
213983 213860	01983 01994	Torque Fluid 56 Torque Fluid 47	EUSA EUSA	N/A	SPECIALTIES
211021	02010-	Evvon Plus Motor Oil 10W	FUSA	N/A	SPECIALTIES
212010	02010	Exxon Plus Motor 0il 10W	EUSA -	N/A N/A	SPECIALTIES SPECIALTIES
212011 212012	02011 02012	Exxon Plus Motor Oil 30	EUSA	N/A	SPECIALTIES
212013	02013	Exxon Plus Motor Oil 40	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
212014	02014	Exxon Plus Motor Oil 50	EUSA FIISA	N/A N/A	SPECIALTIES
215730 215740	02026 02027	2027 MIL-B SF Motor Oil 40	EUSA	N/A	SPECIALTIES
212038	02038	Exxon Heavy Duty 10W	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
212039 212040	02039 02040	Exxon Heavy Duty 30	EUSA	N/A	SPECIALTIES
212041	02041	Exxon Heavy Duty 151-40	EUSA	N/A	SPECIALTIES
212043	02043	Exxon Heavy Duty 20V-20	EUSA Eusa	N/A N/A	SPECIALTIES SPECIALTIES
212048 212049	02048 02049	Exxon Plus Motor 0il 10W Exxon Plus Motor 0il 20W-20 Exxon Plus Motor 0il 30 Exxon Plus Motor 0il 30 Exxon Plus Motor 0il 40 Exxon Plus Motor 0il 50 2026 MIL-B SF Motor 0il 40 Exxon Heavy Duty 10W Exxon Heavy Duty 10W Exxon Heavy Duty 40 Exxon Heavy Duty 40 Exxon Heavy Duty 20W-20 XD-3 Extra 30 XD-3 Extra 40 2050 Motor 0il 20W-40 XD-3 10W XD-3 20W-20 XD-3 30 XD-3 40	EUSA	N/A	SPECIALTIES
212350	02050	2050 Motor 0il 20W-40	EUSA	N/A	SPECIALTIES
212051	02051	XD-3 10W	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES
212052 212053	02052 02053	XD-3 20W-20 XD-3 30	EUSA	N/A	SPECIALTIES
212054	02054	XD-3 40	EUSA	N/A	SPECIALTIES SPECIALTIES
212055 212065	02055 02065	XD-3 15W-40 XD-3 Extra 15W-40	EUSA EUSA	N/A N/A	SPECIALTIES
212067	02067	2067 Motor 0il 15W-40	EUSA	N/A	SPECIALTIES
232068	02068	HDX Plus 10¥	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES
232069 232070	02069 02070	HDX Plus 20W-20 HDX Plus 30	EUSA	N/A	SPECIALTIES
232071	02071	HDX Plus 40	EUSA	N/A	SPECIALTIES SPECIALTIES
316055	02173	Estor G	EUSA Eusa	N/A N/A	SPECIALTIES
312181 312182	02181 02182	Estor Super 40 Estor Super 15W-40	EUSA	N/A	SPECIALTIES
316086	02183	Estor GLX	EUSA	N/A	SPECIALTIES SPECIALTIES
212201	02201	2201 Diesel Lubricating Oil OIOL 2201	EUSA EUSA	N/A N/A	SPECIALTIES
312201 212202	02201 02202	2202 Diesel Lubricating Oil	EUSA	N/A	SPECIALTIES

PRODUCT FORMULA PRODUCT DESCRIPTION SUPPLIER CODE LOCATION FURING

PRODUCT	FORMULA	PRODUCT DESCRIPTION		SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
232482	02482	2482 Motor 011 30	EUSA		N/A	SPECIALTIES	- Jr
232483 232484	02483 02484	2483 Motor Oil 40 2484 Motor Oil 15W-40	EUSA EUSA		N/A N/A	SPECIALTIES	
312507	02507	150 Sol Ext. Bright Stock	EUSA		N/A	SPECIALTIES SPECIALTIES	
319035	02561	2600 VIS PA CYL Blend Stk	EUSA		C3	SPECIALTIES	
319035 225026	02561	Penn Resin	EUSA		C3	SPECIALTIES SPECIALTIES	
328021	02576	Cylesstic 1500	EUSA		N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
322610 322611	02610	Cylesstic TK 460	EUSA		N/A	SPECIALTIES	
322613	02611 02613	Cylesstic TK 680 Cylesstic TK 1000	EUSA EUSA		N/A	SPECIALTIES	
219030	02626	Canthus 680	EUSA		N/A N/A	COECTALTIES	
319040	02627	Canthus 1000	EUSA		N/A	SPECIALTIES	
386040	02970	Zerice 46	EUSA		N/A	SPECIALTIES	
386050	02971	Zerice 68	EUSA		N/A	SPECIALTIES	
386061 333050	02972 03050	2972 Compressor Oil Telura 315	EUSA EUSA		N/A	SPECIALTIES	
333054	03054	Fog 0i1	EUSA		N/A N/A	SPECIALTIES	
333056	03056	EXX-Print 703	EUSA		N/A	SPECIALTIES	
333057	03057	EXX-Print 705	EUSA		N/A	SPECIALTIES	
343058	03058	EXX-Print 775	EUSA EUSA		N/A	SPECIALTIES	
333060 333061	03060	EXX-Print 990 EXX-Print 710	EUSA		C3	SPECIALTIES	
333063	03063	EXX-Print 791	EUSA EUSA		N/A N/A	SPECIALITES	
333067	03067	EXX-Print 7220	EUSA		N/A	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	
333068	03068	Telura 415	EUSA		N/A	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	
333077	03077	Telura 330	EUSA		N/A	SPECIALTIES	
333078	03078 03079	Telura 343	EUSA EUSA		N/A	SPECIALTIES	
343079 333079	03079	3079 Process 011 Telura 407	EUSA		N/A N/A	SPECIALITES	
333081	03081	Telura 401	EUSA		N/A	SPECIALTIES	
333082	03083	Telura 323	EUSA		N/A	SPECIALTIES	
333083	03083	Telura 417	EUSA EUSA		N/A	SPECIALTIES SPECIALTIES	
333084	03084	Telura 521	EUSA		N/A	SPECIALTIES	
333088 333090	03088	Telura 662 Telura 613	EUSA EUSA		N/A N/A	SPECIALTIES	
333091	03091	Telura 619	EUSA		H/A	SPECIALTIES SPECIALTIES	
343092	03092	Telura 671	EUSA		N/A	SPECIALTIES	
343094	03094	3094 Process Oil	EUSA		N/A	SPECIALTIES SPECIALTIES	
333098 343099	03098 03099	Telura 619D 3099 Process Oil	EUSA EUSA		N/A N/A	SPECIALTIES	
343101	03101	Synesstic 32	EUSA		N/A	SPECIALTIES	
343102	03102	Synesstic 68	EUSA		N/A	SPECIALTIES	
343103	03103	Synesstic 100	EUSA		N/A	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	
343106	03106	Instrument 011	EUSA		N/A	SPECIALITES	
343127 343128	03127 03128	Univis J 13	EUSA		N/A N/A	SPECIALTIES SPECIALTIES	
343129	03129	Univis J 13 A Univis J 13 A Univis J 26	EUSA		N/A	SPECIALTIES	
379058	03131	Univis J 26	EUSA		N/A	SPECIALTIES	
313146	03146	3146 Hydraulic Oil Base	EUSA		N/A	SPECIALTIES	
313147	03147	3147 Hydraulic Oil Base	EUSA		N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
363186 363187	03186 03187	Somentor 31 Somentor 35	EUSA EUSA		DC1 N/A	SPECIALTIES	
363188	03188	Somentor 42	EUSA		N/A	SPECIALTIES	
363189	03189	Somentor 43	EUSA		V1	SPECIALTIES	
133193	03193	Somentor 35	EUSA		10	SPECIALTIES	
133194	03194	Somentor 31	EUSA		0.00	SPECIALTIES	
355000 355020	03200	Mentor 28 Mentor 32	EUSA EUSA		W1	SPECIALTIES SPECIALTIES	
383261	03261	3261 White Oil Base 75 P	EUSA		W1 N/A	SPECIALTIES	
333296	03296	Caloria HT 43	EUSA		N/A	SPECIALTIES	
346036	03320	Flexon 660	EUSA		N/A	SPECIALTIES	
346055	03335	Flexon 845	EUSA		N/A	SPECIALTIES	
346086 343337	03336 03337	Flexon 785 Flexon 767	EUSA EUSA		N/A	SPECIALTIES SPECIALTIES	
333339	03339	Flexon 650	EUSA		N/A	SPECIALTIES	
346039	03341	Flexon 680	EUSA		N/A	SPECIALTIES	
383359	03359	Zerice S 68	EUSA		N/A	SPECIALTIES	
383360	03360	Zerice S100	EUSA		N/A	SPECIALTIES	
333376 333389	03376	Jayflex 210	EUSA EUSA		N/A N/A	SPECIALTIES SPECIALTIES	
327796	03389	Flexon 815 Orchex 796	EUSA		N/A	SPECIALTIES	
343445	03445	Exxon Crop O11	EUSA			SPECIALTIES	
493501	03501	Parvan 2730	EUSA		N/A	SPECIALTIES	

0000	WCT	CARMINA	READUCT ACCCULATION		cungi ten	WARNING	PLANT	FURNIS
PROD	25.5	FORMULA	PRODUCT DESCRIPTION		SUPPLIER	CODE	LOCATION	FURING
	3502 3503	03502	Parvan 3150	EUSA		N/A	SPECIALTIES	
493	503	03503 03503	3503 Refined Wax Parvan 3830	EUSA		N/A N/A	SPECIALTIES	
493	504	03504	Parvan S250	EUSA EUSA		N/A	SPECIALTIES SPECIALTIES	
496	506	03506	3506 Refined Wax	EUSA EUSA		N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
496	507	03507	3507 Refined Wax	EUSA		N/A	SPECIALTIES	
493	507 1519	03507	Parvan 129 Parvan 4550	EUSA		N/A N/A	SPECIALTIES	
496	525	03519 03525	3525 Scale Wax	EUSA		N/A	SPECIALTIES SPECIALTIES	
493	644	03644	Slack Wax 75	EUSA			SPECIALTIES	
496	648	03648	3648 Slack Wax	EUSA		N/A	SPECIALTIES	
493	648 650	03648 03650	Slack Wax 150 Slack Wax 200	FUSA		N/A N/A	SPECIALITIES	
496	655	03655	3655 Petroleum	EUSA		N/A	SPECIALTIES	
496	680	03680	3680 Refined Wax	EUSA		N/A	SPECIALTIES	
333	680 710	03680	Parvan 4450	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA		N/A N/A	SPECIALTIES	
344	053	03710 03727 03729 03732	Fanox N 33 FEBIS K 68 FEBIS K 220 3732 Roll 011	FUSA		N/A	SPECIALTIES	
344 323	073	03729	FEBIS K 220	EUSA		N/A	SPECIALTIES	
323	732	03732	3732 Roll 011	EUSA		N/A	SPECIALTIES	
343 350	040	03737 03777 03779	Fenso 37 Kutwell 40	EUSA		N/A	SPECIALTIES	
350	050	03779	Kutwell 50	FUSA		N/A N/A	SPECIAL TIES	
350 350 343	030	03/89	Kutwell 30	EUSA		N/A	SPECIALTIES	
343	802	03802	Kutwell 82	EUSA		N/A	SPECIALTIES	
343	820 827	03820 03827	Dortan N 14 Dortan N 34	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA		N/A N/A	SPECIALTIES	
3438	833	03833	Dortan N 36	EUSA		N/A	SPECIALTIES	
3438	853	03853	Oortan N 53	EUSA		N/A	SPECIALTIES	
3038	894	03894	Lector 45	EUSA		N/A	SPECIALTIES	
3439	901	03901 03906	Pennex N 40 Pennex N 47	EUSA		N/A N/A	SPECIALTIES	
2903	326	04002	Rust-Ban 326	EUSA		N/A	SPECIALTIES	
2840	051	04051	Rust-Ban 343	EUSA		N/A	SPECIALTIES	
334	114	04114	4114 Rust Preventive	EUSA EUSA EUSA EUSA		DC1 DC1	SPECIALTIES	
2803 4210	010	04114 04228	Rust-Ban 392	FUSA		N/A	SPECIALTIES	
4210	020	04229	Estan 2	EUSA EUSA		N/A	SPECIALTIES	
4210	030	04230	Estan 3	EUSA		N/A	SPECIALTIES	
4142	240	04240	Argon EP 0	EUSA EUSA EUSA		H/A	SPECIALTIES	
4142	245	04241 04245	Ronek FP 0	FUSA		N/A N/A	SPECIAL TIES	
4142	246	04246	Ronek EP 1	EUSA		N/A	SPECIALTIES	
4142		04247	Ronek EP 2	EUSA		N/A	SPECIALTIES	
4610		04291	Van Estan 10	EUSA EUSA EUSA		N/A	SPECIALTIES	
4144		04456 04481	Ladey Subzero Special	FUSA		N/A DC2	SPECIAL TIES	
4680		04508	Van Talgar EP 3	EUSA		CS	SPECIALTIES	
4145		04508	4508 EP Grease	EUSA		C2	SPECIALTIES	
4680		04509 04509	Van Talgar EP 4	EUSA		C2	SPECIALTIES	
4680		04510	Al14 Rust Preventive Rust-Ban 392 Estan 1 Estan 2 Estan 3 Argon EP 0 Argon EP 1 Ronek EP 0 Ronek EP 1 Ronek EP 2 Van Estan 10 4456 Graphite Grease 1 Ladex Subzero Special Van Talgar EP 3 4508 EP Grease Van Talgar EP 4 4509 EP Grease Van Talgar EP 5 Nebula EP 0 Nebula EP 1 Nebula EP 1	EUSA		C2 C2 C2 C2 C2	SPECIALTIES	
4360	050	04569	Nebula EP 0	EUSA		N/A	SPECIALTIES	
4360		04570	Nebula EP 1	EUSA		N/A	SPECIALTIES	
4360		04571	Nebula EP 2 Carum 330	EUSA		N/A N/A	SPECIALTIES	
4215	537	04585 04715	Fibrax 370	EUSA		N/A	SPECIALTIES SPECIALTIES	30
4147	729	04729	Exexen TMS	EUSA			SPECIALTIES	
4191	130	04785	Andok 260	EUSA		N/A	SPECIALTIES	
4191		04786	Andok 8	EUSA		N/A N/A	SPECIALTIES SPECIALTIES	
4191		04787 04788	Andok C Andok BR	EUSA		N/A	SPECIALTIES	
4151	102	05102	5102 White Grease	EUSA		N/A	SPECIALTIES	V
4151	06	05106	Cotton Picker Spindle Grease	EUSA		N/A	SPECIALTIES	
4197	60	05115	Beacon 325	EUSA		N/A N/A	SPECIALTIES SPECIALTIES	
4151	24	05120 05124	Arapen RB 320 Gear Cover 40	EUSA EUSA		11/A	SPECIALTIES	i i
4197	20	05127	Beacon P 290	EUSA		N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
4151	29	05129	Exxon TML	EUSA		N/A	SPECIALTIES	
4197		05131	Beacon 2	EUSA		CZ	SPECIALTIES SPECIALTIES	
4197	33	05132 05133	Beacon EP-1	EUSA		C2 N/A	SPECIALTIES	
		~~4~~						

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
437031	05135	Beacon Q 2	EUSA	N/A	SPECIALTIES	
415137 415140	05137	5137 EP Grease	EUSA	999	SPECIALTIES	
415142	05140 05142	Exxon Mill Grease Exxon 40/40 Grease	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
415144	05144	5144 EP Grease 1	EUSA	C2	SPECIALTIES	
415146	05146	5146 EP Grease	EUSA EUSA	CZ	SPECIALTIES SPECIALTIES	
455151	05151	Lidok EP 0 Lidok EP 1	EUSA	N/A	SPECIAL TIES	
455152 455153	05152 05153	Lidok EP 2	FIISA	N/A N/A	SPECIALTIES	
475154	05154	5154 EP Grease	EUSA EUSA EUSA EUSA	C2	SPECIALTIES SPECIALTIES SPECIALTIES	
425158	05158	Rolubricant 2	EUSA	CZ N/A	SPECIALTIES SPECIALTIES	
425160 415160	05160 05160	5160 Chassis Grease 529 Maralube Moly Grease	EUSA EUSA	N/A N/A	SPECIALTIES	
255164	05164	Ronex MP	FUSA	N/A	SPECIALTIES SPECIALTIES	
415172	05172	Unirex N2	EUSA EUSA	N/A	SPECIALTIES	
415173 415182	05173 05182	Unirex N3	EUSA	N/A	SPECIALTIES SPECIALTIES	
425187	05187	Unirex S2 Exxon Epic EP 102	EUSA EUSA	N/A C1	SPECIALTIES	
415187	05187	Epic EP 102 OP 3210 E Grease Ronex Extra Duty 1 Ronex Extra Duty Moly Thredkote 706	EUSA	Čì	SPECIALTIES	
415188	05188	QP 3210 E Grease	EUSA	CZ	SPECIALTIES	
415194 415195	05194 05195	Romey Extra Duty I	EUSA EUSA	N/A N/A	SPECIALTIES	
450706	05264	Thredkote 706	EUSA	C2	SPECIALTIES SPECIALTIES	
415165	05265	5265 Thread Compound	EUSA	CS	SPECIALTIES	
450709 475370	05267 05370	Thredkote 709 Spartan EP 68	EUSA EUSA	CZ	SPECIALTIES	
475372	05372	Spartan EP 150	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
475373	05373 05374 05375	Spartan EP 220	EUSA	N/A	SPECIALTIES	
475374 475375	05374	Spartan EP 320 Spartan EP 460	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
475376	05376	Spartan EP 680	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
475377	05377	Spartan EP 2200 Ermist EP 100	EUSA EUSA	N/A	SPECIALTIES	
415400 415404	05400 05404	Enmist EP 100 Enmist EP 460	EUSA	N/A	SPECIALTIES	
415410	05410	Mist 011 EP 220	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
415430	05430	5430 Gear 011 85W-90	EUSA	N/A	SPECIALTIES	
255431 415451	05431 05451	Gear Oil 85V-140 Iogear EP 100	EUSA EUSA	N/A	SPECIALTIES	
255475	05475	Gear Oil GX 80W-90	EUSA	N/A	SPECIALTIES SPECIALTIES	
255478	05478	Gear 011 GX 85V-140	EUSA	N/A	SPECIALTIES	
415485 456089	05485 05504	5485 Gear Oil 80W-80 Pennztac Fluid 3000	EUSA EUSA	N/A	SPECIALTIES	
415504	05504	5504 Gear Fluid 4K	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
456005	05504	Surett Fluid 4K	EUSA	N/A	SPECIALTIES	
455504 456011	05504 05506	Onyx EP MS Pennztac Fluid 5000	EUSA EUSA	N/A	SPECIALTIES	
456010	05506	Surett Fluid 6K	EUSA	N/A	SPECIALTIES SPECIALTIES	
456086	05602	Surett N 26K	EUSA	C3	SPECIALTIES	
456087	05603	Surett N 80K	EUSA	C3 C3	SPECIALTIES	
456088 415609	05604 05609	Surett N 270K Gear Cover Fluid 6	EUSA EUSA	VI	SPECIALTIES SPECIALTIES	
455610	05610	Gear Cover Fluid Arctic	EUSA	DC2	SPECIALTIES	
455611	05611	Gear Cover Fluid 21	EUSA	N/A	SPECIALTIES	
455612 455621	05612 05621	Gear Cover Fluid FS-21 Special Elbac Fluid 24	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
315702	05702	Exxmar XP	EUSA	N/A	SPECIALTIES	
315703	05703	Exxmar XA	EUSA	N/A	SPECIALTIES	
315704	05704 05705	Exxmar 12TP 30 Exxmar 12TP 40	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
315705 315706	05706	Exxmar 12TP 50	EUSA	N/A	SPECIALTIES	
315707	05707	Exxmar 24TP 30	EUSA	N/A	SPECIALTIES	
315708 315709	05708 05709	Exxmar 24TP 40 Exxmar 24TP 50	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
315710	05710	Exxmar 30TP 30	EUSA	N/A	SPECIALTIES	
315711	05711	Exxmar 30TP 40	EUSA	N/A	SPECIALTIES	
315712 315713	05712 05713	Exxmar 30TP 50 Exxmar 40TP 30	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
315714	05714	Exxmar 40TP 40	EUSA	N/A	SPECIALTIES	
315715	05715	Exxmar 40TP 50	SUSA	N/A	SPECIALTIES	
415716 315718	05716 05718	5716 Polyurea Grease Exxmar X22	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
315719	05719	Exxmar X60	EUSA	N/A	SPECIALTIES	
315720	05720	Exxmar X70	EUSA	N/A	SPECIALTIES	

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION FURING
315721 425730 437034 437037 435760 435761 315822 170370 358258 418678 418679 318680 418681 348682 348683 418684 348685 348685 348686 418688 318696 318697 138698	05721 05730 05758 05759 05760 05761 05822 07037 08258 08678 08678 08681 08681 08682 08683 08684 08686 08686 08686 08696	Examar X90 Polyrex P Norva 340 Norva EP 375 Grease Slop Oil Grease Runout 5822 Cylinder Oil 70 7037 OD Asphalt WS 2234 Engine Oil WS 2650 Grease WS 2651 Grease WS 2647 ATF Base WS 2640 Grease WS 2652 Cutting Oil WS 2653 Punching Oil WS 2655 Quench Oil Concentrate WS 2656 Grease WS 2657 Cutting Oil WS 2656 Grease WS 2657 Rengine Oil 20W-40 WS 2671 RR Engine Oil 20W-40 WS 2667 Solvent	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA	N/A N/A C2 DC2 C2 N/A DC4	SPECIALTIES
418699 318700 368701 368702 318703 318704 218705 138706 138707	08699 08700 08701 08702 08703 08705 08706 08707	WS 2658 Grease WS 2672 Process 011 WS 2668 Cold-Rolling 011 WS 2669 Cold-Rolling 011 WS 2674 Scrubber 011 WS 2675 Scrubber 011 WS 2673 Shock Absorber Fluid WS 2675 Solvent US 2675 Solvent US 2675 Solvent US 2675 Solvent US 2676 Solvent US 2677 Solvent US 2677 Solvent US 2677 Solvent US 2678 Solvent US	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA	W4 CE7 CE7 CC01 CO1 CO1 CO1 CO2 CC2 OC9 CC12 WS	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES UTILITIES

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	WARNING CODE	PLANT LOCATION	FURINO
		Lubrizol 75A	Lubrizol Corp	CEI	SPECIALTIES	
		Lubrizol 859	Lubrizol Corp	N/A	SPECIALTIES	
		Lubrizol 1375 Lubrizol 3220A	Lubrizol Corp Lubrizol Corp	CE2 N/A	SPECIALTIES	
		Lubrizol 3715	Lubrizol Corp	DC12	SPECIALTIES	
		Lubrizol 5003	Lubrizol Corp	N/A	SPECIALTIES	*
		Lubrizol 5033	Lubrizol Corp	CE2	SPECIALTIES	
		Lubrizol 5044 Lubrizol 5130	Lubrizol Corp	CE1	SPECIALTIES	
		Lubrizol 5178	Lubrizol Corp Lubrizol Corp	DC8	SPECIALTIES SPECIALTIES	
		Lubrizol 5198	Lubrizol Corp	DC8	SPECIALTIES	
		Lubrizol 5788	Lubrizol Corp	008	SPECIALTIES	
		Lubrizol 6268 Lubrizol 6501	Lubrizol Corp	DC10	SPECIALTIES	
		Lubrizol 6766A	Lubrizol Corp Lubrizol Corp	N/A CE2	SPECIALTIES	
		LZ.3220A Code 10556	Lubrizol Corp	N/A	SPECIALTIES	
		LZ.3715 Code 225137	Lubrizol Corp	DC12	SPECIALTIES	2
		LZ.5003, Code 10534 LZ.5178J Code 10169	Lubrizol Corp	N/A CE2	SPECIALTIES	
		LZ.6268 Code 10544	Lubrizol Corp Lubrizol Corp	DC10	SPECIALTIES SPECIALTIES	
		LZ.859, Code 82660	Lubrizol Corp	N/A	SPECIALTIES	
		05#86917	Lubrizol Corp	N/A	SPECIALTIES	4
		Mayco No. 1 Lard 011 Maychlor SL-8	Mayco 011 & Chem Mayco 011 & Chem	N/A N/A	SPECIALTIES	
		Bullseve Spray Pattern Indicator	Miliken Chem	70	SPECIALTIES	
		Copper Alloy CA102	Millard Utility	V6	SPECIALTIES	
		Mobilad C-603	Mobil Oil Corp	CE2	SPECIALTIES	
		PC-1244 Defoamer 10% Zinc Nap-All	Monsanto Co. Mooney Chemical	DC8 DC6	SPECIALTIES	
		Sodium Chloride	Morton Thiokol	N/A	SPEC & UTIL	
		Eliminox Oxygen Scavenger	Nalco	24. 24.	UTILITIES	
		Nalco 1720 Oxygen Scavenger	Malco		UTILITIES	
		Nalco 8328 Corrosion Inhibitor Nalcolyte 603 Coagulant	Nalco Nalco		UTILITIES	
		Solution SO222P Indicator (PH)	Nalco		UTILITIES	
		Solution S0234 TDS-1	Malco		UTILITIES	
		Solution S0250 Special Indicat Solution S0274 H-1 Titrant HIG	Nalco		UTILITIES	
		Solution 50275 H-2 Total Hardn	Nalco Nalco		UTILITIES	
		Solution 50277 H-3 Total Hardn	Naico		UTILITIES	
		Solution S0280 H-7 Calcium Har	Najco		UTILITIES	
		Solution S0295 Nalco 39-2 Solution S0297 3000 Micrombo S	Nalco Nalco		UTILITIES	
		Solution SO408 PH 10.0 Buffer	Nalco		UTILITIES	
		Solution SO613 ST-1	Nalco		UTILITIES	
		Solution SO614 ST-2	Nalco		UTILITIES	
		Solution S0624 Sodium Hydroxid Solution S0635 PA-1	Nalco Nalco		UTILITIES	
		Solution S0636 PA-2	Naico		UTILITIES	
		Solution S0682 TR-2	Nalco		UTILITIES	
		Solution S0685 TR-5	Malco		UTILITIES	
		Solution S0726 Hydrochloric Ac Solution S0729 Deionization Re	Nalco Nalco		UTILITIES	
		Transport-Plus 7200	Nalco		UTILITIES	
		Tri-Act 1801 Inhibitor	Nalco	1.2	UTILITIES	4
		Instant-Lok	Nat'l Starch & Chem	C5	SPECIALTIES	
		Lestoil Heavy Duty Cleaner Citrikleen	Noxell Corp Penetone Corp		SPECIALTIES SPECIALTIES	
		Petroleum Sulfonate	Penreco	CEZ	SPECIAL TIES	
		Petrosul H-60 Sod Sulfonate	Penreco		SPECIALTIES	•
		CAO-1 Antioxidant	PMC Specialties	N/A	SPECIALTIES	
		Liquid Caustic Soda, 50% BT-2	PPG Reilly Ind.	N/A	SPECIALTIES	
		8T-112	Reilly Ind.	N/A	SPECIALTIES	
		Rhodorsil Fluid 47V 12500	Rhone-Poulenc	N/A	SPECIALTIES	
		Stainless Steel Cleaner	Rite-Off	4/4	SPECIALTIES	
		Acryloid 1019 011 Additive Acryloid 150 011 Additive	Rohm & Haas Co Rohm & Haas Co	N/A N/A	SPECIALTIES	
		Acrylaid 917 011 Additive	Rohm & Haas Co	N/A	SPECIALTIES	
		Acryloid 917T ILC 011 Additive	Rohm & Haas Co	N/A	SPECIALTIES	
		Acrylaid 954 011 Additive	Rohm & Haas Co	4/4	SPECIALTIES SPECIALTIES	
		Acryloid HF833 Oil Additive Acryloid HF-848 Oil Additive	Rohm & Haas Co Rohm & Haas Co	N/A N/A	SPECIALTIES	
		AND FIGURE DE -040 OIL MOUTETAG	norm a neas co	10.0	2. 201001103	

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURING	
		Plexol 917 Oil Additive	Rohm & Haas Co	N/A	SPECIALTIES		
		Safety-Kleen 105 Parts Working Solvent	Safety-Kleen	DC13	SPECIALTIES	ar-	
		Isonox 103	Schnectady Chem	N/A	SPECIALTIES		
		BH-38	Spartan Chem		SPECIALTIES		
		Liquid Hand Cleaner	Spartan Chem		SPECIALTIES		
		SO-20 All Purpose Cleaner (Aerosol)	Spartan Chem		SPECIALTIES		
		SD-20 (Bulk)	Spartan Chem		SPECIALTIES		
		Sterigent	Spartan Chem		SPECIALTIES		
		InT Tub & Tile Cleaner	Spartan Chem		SPECIALTIES		
		Dascolene 794	Stuart-Ironsides	N/A	SPECIALTIES		
		Dascolene 3794	Stuart-Ironsides	100	SPECIALTIES	•	
		Sturaco FM 7098	Stuart-Ironsides	N/A	SPECIALTIES		
		77083 TLA-555	Texaco	N/A	SPECIALTIES		
		Acetylene	Union Carbide		SPECIALTIES		
		Diethylene Glycol	Union Carbide		SPECIALTIES		
		Diethylenetriamine	Union Carbide	C02	SPECIALTIES		
		Di Tri-, & Tetraethylene Glycol	Union Carbide	CEB	SPECIALTIES		
		Ethylene Glycol, Polyester & ICF Grade	Union Carbide	000	SPECIALTIES		
		Ethylene Glycol-Iron & Chloride Free	Union Carbide	W8	SPECIALTIES		
		Propane	Union Carbide	-0	SPECIALTIES	*	
		UOP NO. 225 Antioxidant	UOP	CE2	SPECIALTIES		
		NASUL ZS	Vanderbilt, R. T.	DEE	SPECIALTIES	*	
		Na-Sul EDS	Vanderbilt, R. T.		SPECIALTIES	*	
		Na-Sul - BSN	Vanderbilt, R. T.		SPECIALTIES	*	
		Vanlube 691	Vanderbilt, R. T.	CE2	SPECIALTIES		
		Vanlube 81	Vanderbilt, R. T.	N/A	SPECIALTIES		
		Vanlube 848	Vanderbilt, R. T.	CEG	SPECIALTIES		
		Vanlube SS	Vanderbilt, R. T.	CE6	SPECIALTIES		
		Petronate CR	Vitco	N/A	SPECIALTIES		
		Petronate HL	Vitco	n/ n	SPECIALTIES		
		Sodium Petroleum Sulfonate	Witco		SPECIALTIES	3.2	
		Sgl Strike Correctable Typewriter Ribbon Lift-Off Correction Tape	Xerax Corp.		SPECIALTIES SPECIALTIES		
		Zico AA-5104	Xerox Corp. Ziegler Chem & Mineral		ASPHALT	4.5	
		TICO W-3104	Liegier Chem a mineral		MAPRILL		

APPENDIX C DISPOSAL PRACTICES AND POLLUTION SOURCES

CONTENTS

	Page
INTR	ODUCTION
REC	ENT DISPOSAL PRACTICES
	CHEMICAL PROCESS WASTE WATER C-2 WEST SIDE TREATMENT PLANT C-3 EAST SIDE TREATMENT PLANT C-3 GROUNDWATER COLLECTION SYSTEMS C-4
PAST	DISPOSAL PRACTICES
POLI	LUTION SOURCES
	PRODUCT C-6 SPILLS C-6 SLUDGE RESIDUE C-6 CHROMIUM SLAG C-6 SEPTIC LEACH FIELDS AND SEWERS C-7 DRY WELLS C-7 OIL-WATER SEPARATORS C-7 PLANT SEWERS C-7
REFI	ERENCES
	TABLE
C-1.	Types of Wastes Recently Generated at the Exxon Company Plant, Bayonne, New Jersey and Disposed Off-Site.
	<u>FIGURE</u>
C-1.	Locations of Sewers, Sanitary Septic Systems, Documented Spills, and Past and Present Oil-Water Separators.
	<u>ATTACHMENTS</u>
C-I.	Dan Raviv Associates, Inc. 1992. Storm Water Sewer and Process Wastelines, February 1992.
C-II.	Humble Oil & Refining Co. 1970. West Side Effluent Treating Plant.

1

ATTACHMENTS (Continued)

- C-III. Dan Raviv Associates, Inc. 1992. Location of Existing Monitoring/Recovery Wells, Interceptor Trench, Areas of Known Product and Proposed Wells, February 1992.
- C-IV. Dan Raviv Associates, Inc. 1992. Locations of Visible and Suspected Chromium Slag and Paved Areas, February 1992.

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APPENDIX C

DISPOSAL PRACTICES AND POLLUTION SOURCES

INTRODUCTION

The purpose of this section is to provide a description, including dates, of all past and present disposal practices as well as the location of all known and suspected pollution sources at the Exxon Company Plant, Bayonne, New Jersey. This section addresses the requirement of the Administrative Consent Order (ACO) of November 27, 1991, Appendix B, Section IIB, Item 3.

RECENT DISPOSAL PRACTICES

The Site generates several types of solid waste that are collected, segregated, and stored temporarily, and then transported off-site for disposal by licensed contractors. Solid wastes disposed off-site are listed in Table C-1. The garbage at the Site is collected in dumpsters stationed at various locations throughout the Site. The dumpsters are emptied routinely and their contents transported off-site for disposal. Solid wastes (both hazardous and non-hazardous) generated by facility operations are segregated and collected in drums and roll-off containers (CH2M Hill, Inc. 1991). Roll-offs are temporarily stored on the paved area next to the MDC Building or inside the Greer Building near Pier No. 1. The other waste management activities at the site include wastewater and recovered ground-water treatment by two on-site treatment plants (East Side and West Side Treatment Plants) (Dames and Moore 1979) and the collection of chemical process wastewater at the Chemical Waste Treatment Plant. The chemical process wastewater is then transported to the Bayway Refinery for off-site treatment (CH2M Hill, Inc. 1991; Exxon Company, U.S.A. and Exxon Chemical Americas 1990). Sanitary wastewater discharges to on-site septic systems or to the Bayonne City sewer system (Exxon Company, U.S.A. 1989).

Storm-water runoff and minor amounts of process wastewaters are transported via a sitewide plant sewer system to either the East Side Treatment Plant or the West Side Treatment

Plant. Treated wastewater from the West Side Treatment Plant is transferred to the East Side Treatment Plant for further treatment. The sewer system at the Site collects rainfall runoff, drained contact water, once-through cooling water, steam condensate, pumped ground water, and general wash water (CH2M Hill, Inc. 1991; Exxon Company, U.S.A. and Exxon Chemical Americas 1990). In addition, non-contact cooling water, boiler blow-down, equipment wastewater, and wastewater from tank bottoms are received by the sewer systems at the Site (CH2M Hill, Inc. 1991). Drainage from tank fields consists almost entirely of direct runoff, with some limited tank water drawoffs and condensate from tank heater coils. In tankage areas, the Site sewer system is cut off by valves or isolated to impound material and release it under controlled conditions to the downstream treatment facilities. Floor drains in the blending and packaging warehouse lead to a product sump, the contents of which are pumped to the recycle oil system for eventual off-site disposal (Fairchild 1993).

The following summaries have been compiled from the Best Management Practices Plan (CH2M Hill, Inc. 1991) and the Spill Control and Counter Measure Plan, Discharge Prevention, Containment and Counter Measure Plan, and Discharge Cleanup and Removal Plan (Exxon Company, U.S.A. and Exxon Chemical Americas 1990).

CHEMICAL PROCESS WASTE WATER

Within the Chemical Plant Area, selected process wastewater from the reactor building drains into a separate, independent Chemical Plant process wastewater sewer system and on-site treatment facilities that are part of the Chemical Plant operations (CH2M Hill 1991). The chemical waste treatment plant is located in the south-central portion of the Chemical Plant on Attachment C-I. Treated water from this treatment plant is accumulated and periodically transported to Exxon's Bayway Refinery in Linden, New Jersey, via tankwagon, for biological treatment and discharge under Bayway's NJPDES-DSW Permit (Exxon Company, U.S.A. and Exxon Chemical Americas 1990).

WEST SIDE TREATMENT PLANT

The West Side Treatment Plant is located in the Lube Oil Area near Pier No. 1 (as shown on Attachment C-I). Wastewater on the west side of the plant is treated in an API gravity separator and a dissolved air flotation (DAF) unit. West side wastewater is pumped to the inlet of the API separator by means of a vertical lift screw pump. Subsequent flow through the separator and DAF unit is by gravity. A diagram of the original West Side Treatment Plant is shown on Attachment C-II. Effluent from the West Side Treatment Plant is then pumped to the East Side Treatment Plant through a former low-pressure salt-water line for further treatment (Dan Raviv Associates, Inc. 1992a). Sludge generated during the treatment processes is stored in closed tanks prior to contract disposal (Dames and Moore 1979).

Tank storage for storm-water diversion is also provided to collect any excess flow to the separator that may occur during rain storms. When flow to the treatment plant decreases, the accumulated water is released back to the treatment plant at a controlled rate (Exxon Company, U.S.A. and Exxon Chemical Americas 1990).

EAST SIDE TREATMENT PLANT

Wastewater that enters the East Side Treatment Plant (located on Attachment C-I near Piers No. 6 and No. 7) and is treated by an API gravity separator, a deep-bed sand filtration unit, and an activated carbon unit. The east side wastewater flows by gravity to the API separator; effluent from the separator then flows to a sump and is pumped to the deep-bed sand filters. After filtration, the treated water is discharged at the confluence of the Kill Van Kull Waterway and the Upper New York Bay between Piers No. 6 and No. 7 (Exxon Company, U.S.A. and Exxon Chemical Americas 1990). Skimmed oil is routed to the recycle (slop) oil system. Sludge generated during periodic cleaning is disposed off-site.

The East Side Treatment Plant receives drainage from the following areas: General Tank Field, Solvents Tank Field, Low Sulfur Tank Field, No. 2 Tank Field, Av-Gas Tank Field, No.

3 Tank Field, Asphalt Plant, Chemical Plant (including steam water condensate), Plant Loading Areas, Domestic Trade Area, and MDC Warehouse. Wastewaters collected by the West Side Treatment Plant also terminate in the East Side Treatment Plant (Exxon Company, U.S.A. and Exxon Chemical Americas 1990; CH2M Hill, Inc. 1991).

Storm-water diversion and storage facilities are provided upstream of the API separator for times when flow becomes excessive during heavy rain. When the water level in the API separator decreases, the accumulated water from the storage facilities is released back to the treatment plant at a controlled rate (Exxon Company, U.S.A. and Exxon Chemical Americas 1990).

GROUNDWATER COLLECTION SYSTEMS

Ground water and NAPLs are recovered from the interceptor trench, the Avenue "J" Sump, and the recovery wells in the waterfront areas (CH2M Hill, Inc. 1991; Dan Raviv Associates 1992c). The liquids are pumped to the plant sewer systems and treated at the wastewater treatment plants.

The location of the interceptor trench system is shown on Attachment C-III. The trench system consists of a western section and an eastern section that are pitched toward the center at Sump A. Liquids are pumped from Sump A or from Sump B (a back-up sump) directly to the main parking lot sewer system. The Avenue "J" sump, located near the northern end of the western section of the interceptor trench, also collects liquids and discharges them to the plant sewer system in the Main Building parking lot. The sewer system in the Main Building parking lot then discharges to the West Side Treatment Plant.

The recovery wells are located along the waterfront in the Pier No. 1 Area near the Helipad and in the Piers and East Side Treatment Plant Area near Piers No. 6 and No. 7. Eight active recovery wells are located in the Pier No. 1 Area and 13 existing recovery wells are near Piers No. 6 and No. 7 (see Attachment C-III). The recovery wells were installed during the

1970s and 1980s. The liquids recovered from these wells are routed to the plant sewer system and treated at the East Side Treatment Plant (Dan Raviv Associates 1992a; CH2M Hill 1991).

PAST DISPOSAL PRACTICES

A large portion of the Site along the shoreline consists of land that has been reclaimed from the Kill Van Kull Waterway and Upper New York Bay. This area is characterized by variable depths of cinder (and/or ash) fill overlying soft marine or estuarine deposits (Dames and Moore 1979). In addition to cinders and/or ash, construction debris was noted in several historical boring logs. The fill material is discussed in the Site History Report (Geraghty & Miller, Inc. 1993). The cinders and ash were a by-product of plant operations.

A 1-acre sludge residue disposal site has been documented by Exxon Company, U.S.A. (1980 and 1982). The disposal site was located in the northwestern corner of the General Tank Field, north of Tank 1072, and was active from approximately 1956 to 1965 (Exxon Company, U.S.A. 1980).

A Hydrotechnic Corporation Report (1958) describes a previous acid-disposal practice as follows: "The acid discharge from the HCL Scrubber Unit in the Chemical Products Plant is a one percent acid solution. The flow of about 75 gallons per minute passes through a bed of limestone, which serves as a neutralizing pit, and the effluent is discharged to the Kill Van Kull Waterway after dilution with other wastes."

POLLUTION SOURCES

Several potential pollution sources exist on-site. These sources include areas containing NAPL; areas where significant spills have occurred; the lead sludge residue disposal area and any other area of past disposal; areas containing chromium slag; septic leach fields, dry wells, and sewers; and locations that contained oil-water separators. These areas are also addressed in the RI Work Plan (Geraghty & Miller, Inc. 1993).

PRODUCT (NAPL)

Product (NAPL) has been observed on the water table in the Pier No. 1 Area near the helipad (Pier No. 3 Area), the Piers and East Side Treatment Plant Area, the Low Sulfur Tank Field (Tank No. 1066 Area), the southern portion of the Solvent Tank Field, the Lube Oil Area, the Chemical Plant Area, and the "A"-Hill Tank Field (Roy F. Weston, Inc. 1980). These areas are also shown on Attachment C-III.

Historically, as early as the 1970s, floating product has been noted in the area of the interceptor trench (Dan Raviv Associates, Inc. 1992b; Leggette, Brashears, and Graham, Inc. 1974).

SPILLS

Areas that had spills in excess of 100 gallons have been addressed in the RI Work Plan (Geraghty & Miller, Inc. 1993) and are listed in Table 4-2 of this report. These areas are located on Figure 4-1, which shows documented ground spill locations for those spills that could be accurately located from the available documentation. Spills are discussed further in Section 5.0 (Discharges, Spills, and Releases).

SLUDGE RESIDUE

A 1-acre abandoned sludge residue disposal site was located in the General Tank Field, north of Tank No. 1072 (Exxon Company, U.S.A. 1980 and 1982). This area is described in Section 4.2 (Past Disposal Practices) and is a suspected pollution source.

CHROMIUM SLAG

This Site History Report (Geraghty & Miller, Inc. 1993) does not address chromium slag, which is a known issue at the Site and which is being handled in a separate work plan.

However, information on the chromium slag has been compiled from Dan Raviv Associates (1992a) and is provided in the Site History Report. Areas identified as having visible and suspected chromium slag are identified on Attachment C-IV.

SEPTIC LEACH FIELDS AND SEWERS

The septic systems and sewers reportedly only receive sanitary wastewater (Exxon Company, U.S.A. 1989). Constituents in sanitary wastewater may be discharged to the subsurface from septic leach fields (see Figure C-1), and possibly leaks in the sewer lines. According to ESSO Standard Oil Company drawings (Esso 1957a,b,c; 1959), the No. 3 Tank Field had a series of dry wells in it.

DRY WELLS

Dry wells were located in all tank fields (Fairchild 1993).

OIL-WATER SEPARATORS

The locations of several oil-water separators are discussed in Section 3.4 (Aerial Photograph Interpretation). These locations have also been addressed in the RI Work Plan (Geraghty & Miller, Inc. 1993).

PLANT SEWERS

The plant sewers are discussed in the Recent Disposal Practices Section of this Appendix. A series of plant sewers discharge to the East Side and West Side Treatment Plants (CH2M Hill, Inc. 1991; Exxon Company, U.S.A. and Exxon Chemical Americas 1990). A separate chemical plant sewer discharge to the Chemical Process Treatment Plant (CH2M Hill, Inc. 1991; Exxon Company, U.S.A. and Exxon Chemical Americas 1990). Treated water from the West Side

Treatment Plant is transferred to the East Side Treatment Plant via a former low pressure saltwater line (Dan Raviv Associates, Inc. 1992a).

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Table C-1. Wastes Recently Generated at the Exxon Company Plant and Disposed Off-Site, Exxon Company Plant, Bayonne, New Jersey.

Contaminated Soils and Residues and/or Absorbents from Spills

Filtration Cartridges from Fuel Filtering

Materials Used to Clean Up Marine Oil Spills

Sludges from Tank Bottoms

Process Waste Materials (e.g., oily wastes)

Cleaning Solvents for Parts

Sandblast Abrasives from Paint Removal Operations

Skimmed Oils from Oil-Water Separators

Stabilized Sludges from Wastewater Treatment Plant

Phase Separation and Carbon Adsorbtion Materials from Wastewater Treatment Plants

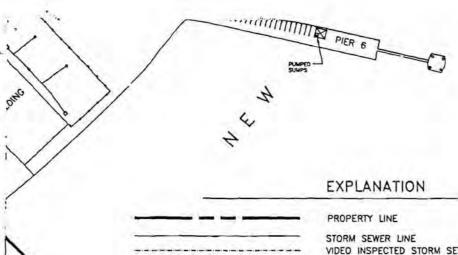
PCB Wastes From Transformers

Compiled from Exxon Company, U.S.A. (1992).

PCB - Polychlorinated biphenyl.

ATTACHMENT C-I

DAN RAVIV ASSOCIATES, INC. 1992 STORM WATER SEWER AND PROCESS WASTELINES FEBRUARY 1992



STORM SEWER LINE
VIDEO INSPECTED STORM SEWER
WATER TRANSFER LINE
PROCESS WASTE LINE
CLEAN WATER LINE NOT IN USE

- MANFOLE

 CATCH BASIN
- CONDENSATE CATCH BASIN
 (STORM SEWER LINES)
 CONDENSATE CATCH BASIN
 (PROCESS WASTE LINES)

• DRAIN

- NOTES: 1) PUMPED SUMPS LOCATED ON PIER 6 AND 7
 COLLECT OIL LEAKAGE FROM TANKER
 UNLOADING/LOADING OPERATIONS.
 OIL IS PUMPED IN ABOVE GROUND
 LINES TO TANK #1097 FROM PIER 6 AND 7.
 - 2) THIS MAP HAS BEEN COMPILED FROM THE BEST AVAILABLE EXISTING INFORMATION AND THE SEWER PIPING AS DEPICTED MAY NOT BE ACCURATE IN EVERY DETAIL. EXACT CONFIGURATIONS WILL BE DETERMINED DURING THE FIELD VERIFICATION TASK. THE SEWER SYSTEM NETWORK IS A COMPOSITE BASED ON MAFS:

WM-1-75 LOP-12-10 C'P-12-548 WM-1079 LOP-12-16 SI CC-12-18 WM-1-83 LOP-12-18 SPCC-12-2 LOP-1-23 CPP-12-549 SPCC-12-4

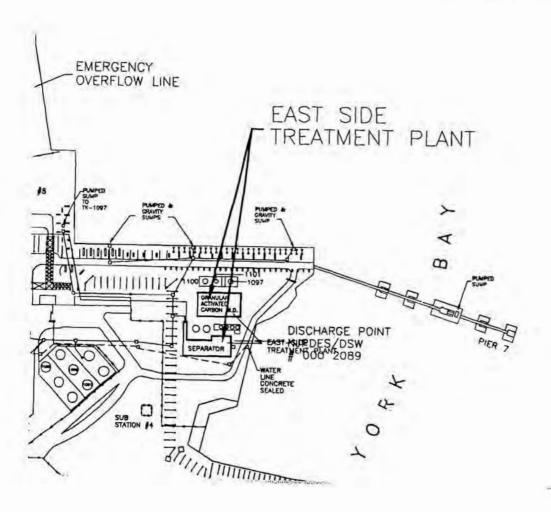


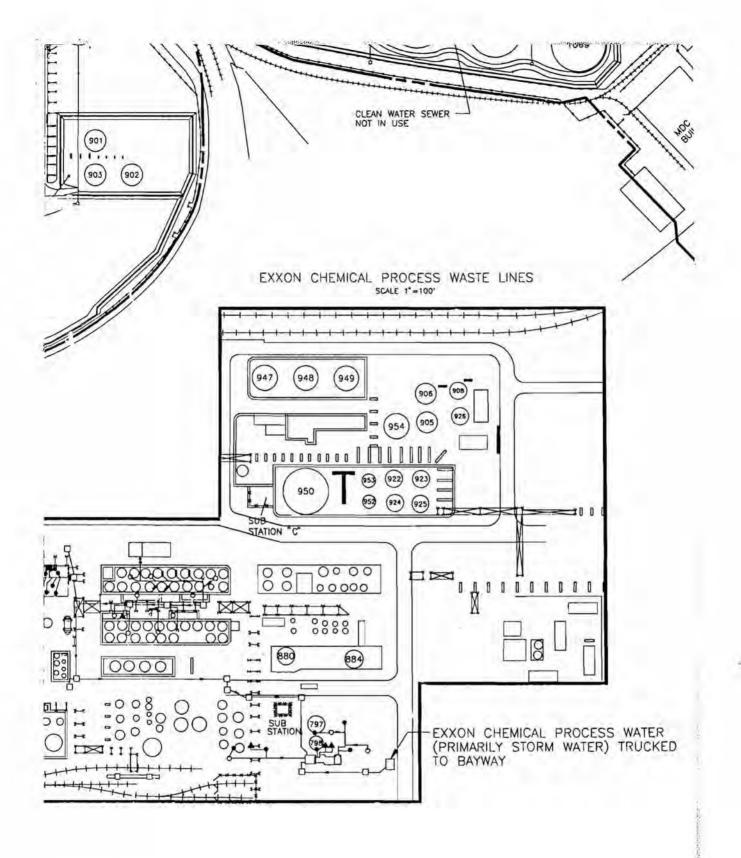
STORM WATER SEWER AND PROCESS WASTE LINES

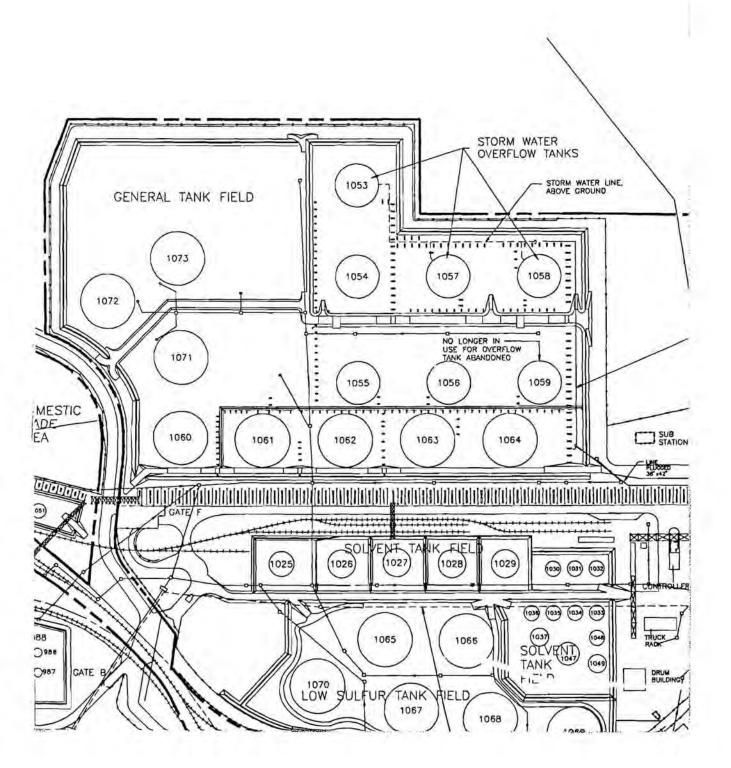
0 200 FT,
APPROXIMATE SCALE

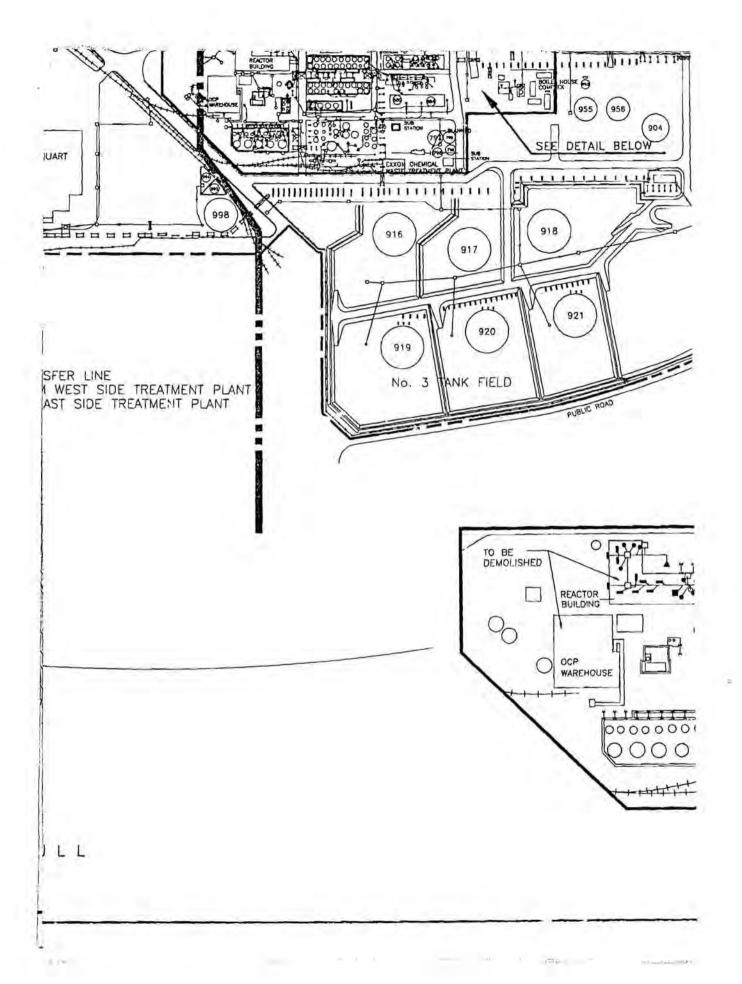
PREPARED BY: ACM/LB DATE: FEBRUARY 1992

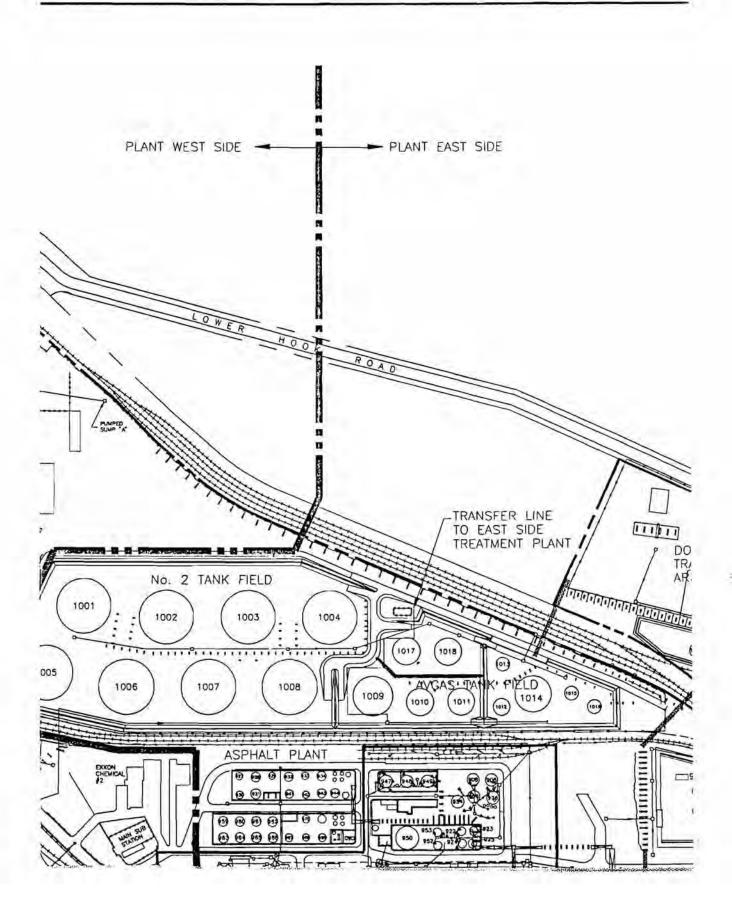
JOB NO.: 91C965-3 FIGURE: 4

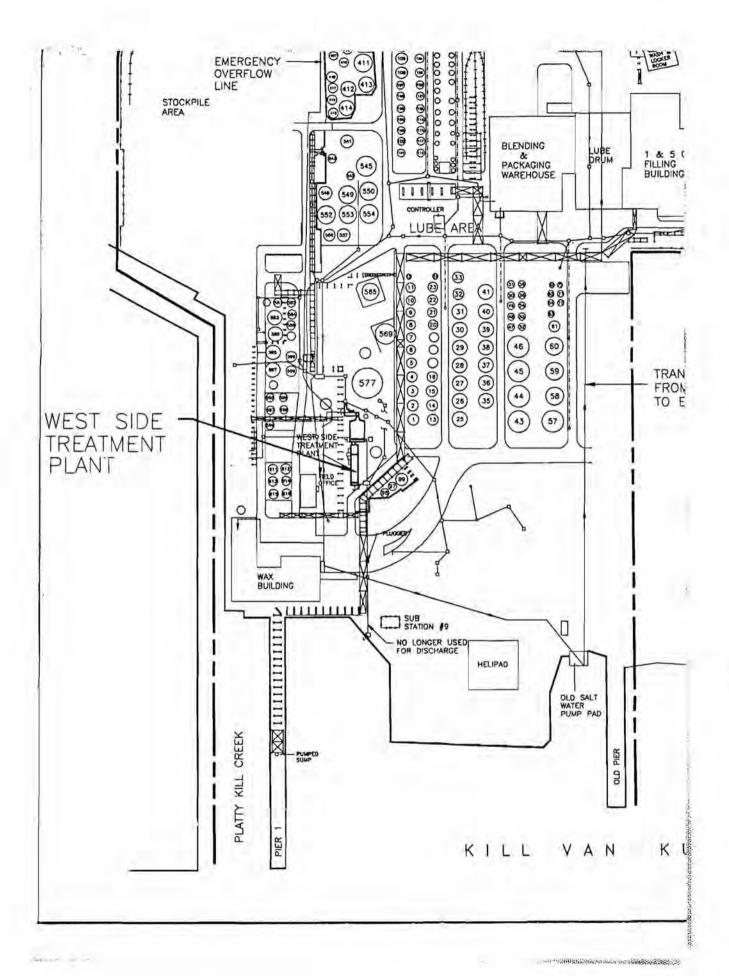


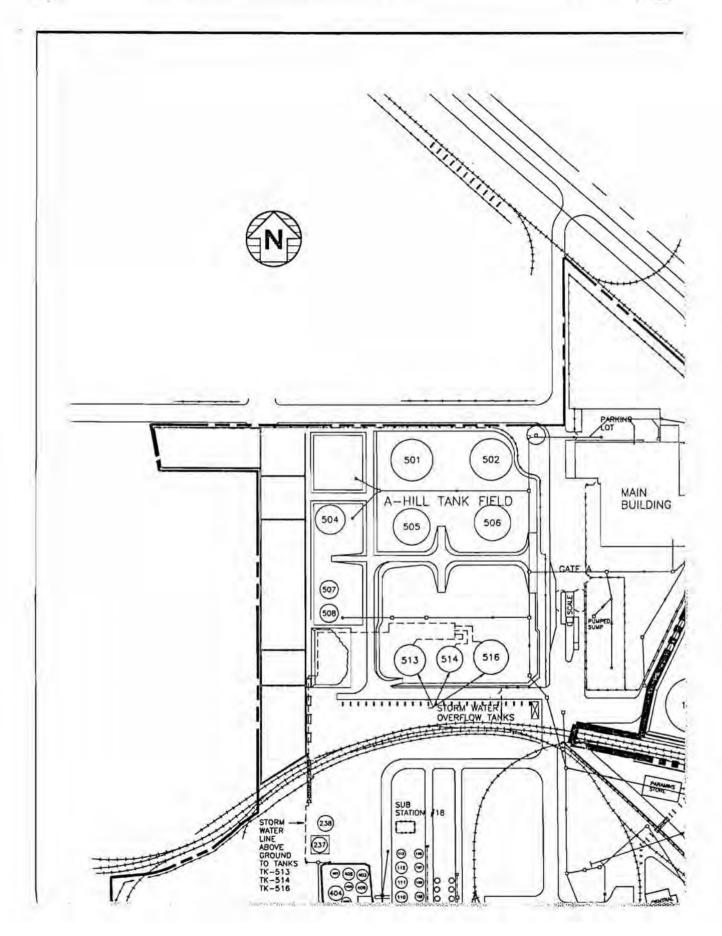












APPENDIX F SITE WATER BUDGET

APPENDIX F

SITE WATER BUDGET

In August 1988, CH2M Hill, Inc. of Parsippany, New Jersey presented a site water budget to the Exxon Company Plant, Bayonne, New Jersey. The water budget was constructed to show the distribution of the water consumption at the Site as required by New Jersey Pollutant Discharge Elimination Systems Permits (see attached CH2M Hill, Inc. 1988 report). Figure 1-1 was missing from the file copy so it has not been included.

apendixf.doc

WATER BALANCE

EXXON
Bayonne, New Jersey
Facility

Prem

Paralagany New Jersey

CONTENTS

Section		Page
1	INTRODUCTION	1-1
	Background	1-1
	Scope of Work	1-1
2	METHODOLOGY	2-1
	Data Collection	2-1
	Data Analysis	2-1
3	RESULTS	3-1
	API Separators, DAF and Sand Filter Beds	3-1
	Removal Efficiencies	3-1
	Oil and Grease	3-1
	Total Suspended Solids (TSS)	3-3
	Total Dissolved Organic Carbon	3-3
	High Pressure Salt Water (HPSW)	3-3
	City Water/Septic Field/City Sewers	3-7
	Surface Runoff (Rain)	3-9
	Product Tank Dewatering	3-12
	Pumped Groundwater	3-13
	Steam	3-13
	Chemical Plant East Side Treatment Plant Outfall	3-15
	EUSA Sewer Balance	3-18 3-19
	Overall Water Balance	3-19
	Overall water balance	3-15
4	CONCLUSIONS	4-1
	ESTP and WSTP Performances	4-1
	HPSW Impact	4-1
	Surface Runoff Impact	4-1 4-2
	Product Tank Dewatering Impact	4-2
	Groundwater/Pumped Groundwater Impact	4-3
	Impact of Neighboring Facilities	4-3
5	RECOMMENDATIONS	5-1
	Improving Current Practices	5-1
	Waste Stream Segregation	5-1
	Stormwater Collection System Pretreatment of Various	5-1
	Wastewater Streams	5-1
	Groundwater Treatment	5-2
	Additional Study	5-2

Section 1 Introduction

Section 1 INTRODUCTION

BACKGROUND

Exxon Company, U.S.A.'s (EUSA) Bayonne, New Jersey Facility is a petrochemical products terminal. The site covers approximately 210 acres, and is composed of various tank fields, a specialties plant (i.e., for lubricating oils, waxes), a chemical Plant, an asphalt plant, a marine loading area, and a main administration building (Figure 1-1, Site Plan).

On the west side of the facility, at the west side treatment plant (WSTP), wastewater from the specialties plant is treated by an API separator, followed by treatment in a dissolved air flotation (DAF) unit. There is currently no discharge from the WSTP. This DAF effluent, in addition to wastewater from the remainder of the facility, is treated at the east side treatment plant (ESTP), which consists of an API separator, followed by sand filter beds. Effluent from the ESTP is discharged to the Kill Van Kull.

SCOPE OF WORK

Although this facility is classified as non-manufacturing, stringent discharge guidelines apply to the ESTP effluent. These guidelines are enforced by the Bayonne facility's New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Surface Waters (DSW) Permit. In an effort to improve both the wastewater management practices at Bayonne and compliance with effluent guidelines, EUSA directed a water balance study to be conducted. The scope of this study includes:

- review of the performance and operation of the API separators, DAF, and sand filter beds.
- identification of all input and output water and wastewater streams
- estimation of annual average flows (in gallons per day)

An intent of this study was to provide a basis for determining any additional efforts that may be necessary to support discussions with the regulatory agency on the discharge permit conditions. This study does not include field measurement of any flows, or sampling of any water or waste streams for analytical purposes. Such efforts may be useful in fine-tuning a water balance, and in determining potential contributors to parameters regulated in the NJPDES/DSW permit. The findings from this study were limited by the existing data available.

This study includes all identified water sources, uses, and discharges. Where appropriate, and when sufficient information was available, ranges on the average flows are presented.

Section 2 Methodology

Section 2 METHODOLOGY

DATA COLLECTION

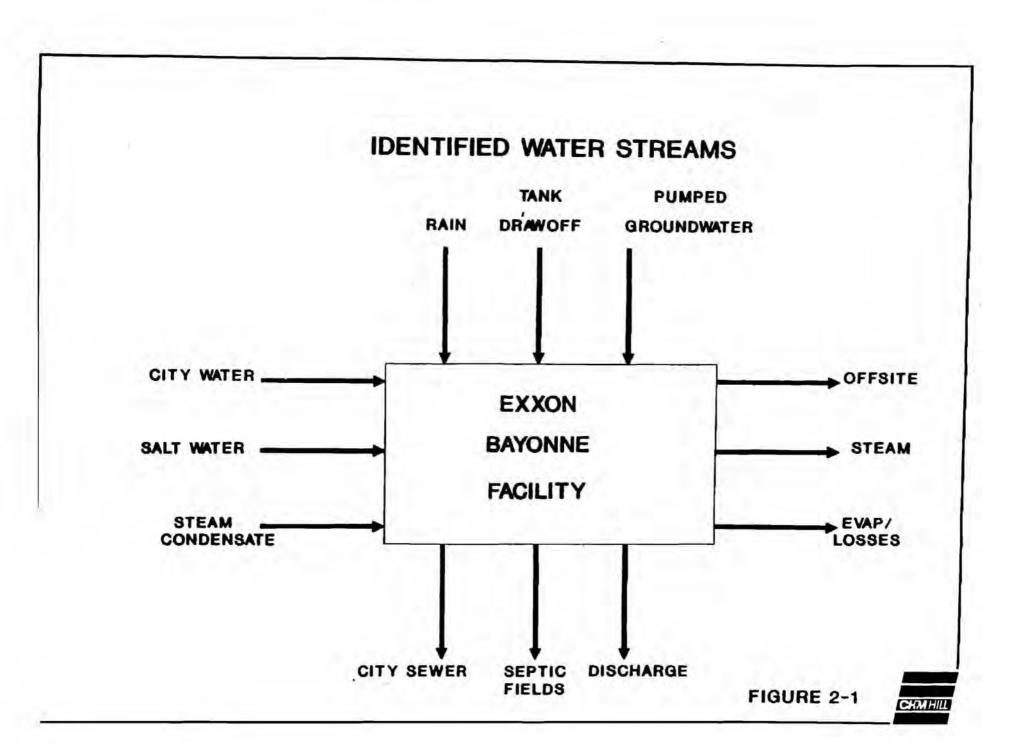
Data were collected through interviews with EUSA personnel (i.e., various engineers, supervisors, and operators), site visits, and review of plant records and historical flow data. A primary reference used in the development of the water balance was a similar study that was performed by Exxon Research and Engineering (ER&E) in 1979. Annual average flows were calculated from data for January 1987 through March 1988. The raw data collected and reviewed during this study are presented in Appendix A of this report.

DATA ANALYSIS

As illustrated in Figure 2-1, the following water streams were identified at the Bayonne Facility:

- (1) high pressure salt water (input)
- (2) purchased city water (input)
- (3) surface runoff of rain (input)
- (4) raw material and product storage tank drawoff (input)
- (5) steam condensate (input)
- (6) pumped groundwater (input)
- (7) chemical plant streams (input/output)
- (8) steam production (output)
- (9) city sewers (output)
- (10) septic fields (output)
- (11) discharge to Kill Van Kull (output)
- (12) offsite waste disposal (output)
- (13) evaporation and losses (output)

Individual water balances, including the identified intermediate streams, as well as documentation of the assumptions and basis for all flow estimations, are discussed in detail in Section 3 (Results).



Section 3
Results

Section 3 RESULTS

API SEPARATORS, DAF, AND SAND FILTER BEDS

No influent data were available for any of the wastewater treatment units. Effluent monitoring data for the ESTP and WSTP consisted of pH, oil and grease, temperature, dissolved organic carbon (DOC), total organic carbon (TOC), and total suspended solids (TSS) measurements. In addition, effluent from the ESTP is required to be measured for biochemical oxygen demand (BOD-5 day), priority pollutants, and toxicity. Because the sampling points were at the DAF and sand filter bed effluent streams for the WSTP and ESTP, respectively, performance of the API separators could not be directly determined.

REMOVAL EFFICIENCIES

Although quantitative performance efficiencies for the DAF and sand filter beds could not be determined without influent data, comparison of effluent quality with NJPDES/DSW permit guidelines and with typical design basis removal efficiencies for each treatment unit provides qualitative information on the overall performance of the treatment plants.

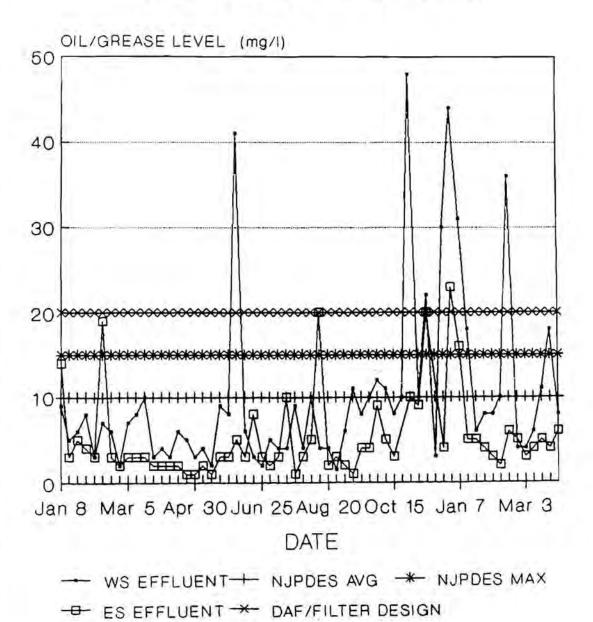
OIL AND GREASE

The API Separator, DAF, and sand filter beds are specifically designed for the removal of oil and grease, typically achieving effluent oil and grease concentrations of >50, <20, and <20 mg/l, respectively. These units work by separating oil and water using methods such as gravitational settling, air flotation, and filtration, respectively. The DAF works most efficiently when used with flocculating chemicals, which increase the settling of suspended particles; Jay Floc 810 is used at the WSTP.

In general, oil and grease levels were in compliance with the NJPDES oil and grease criteria. Average oil and grease levels in the ESTP and WSTP effluents were 5.5 and 10 mg/l, respectively, as compared to the NJPDES average limit of 10 mg/l (Figure 3-1). However, there were some notable exceptions at the WSTP. It was determined that peaks as high as 48 mg/l were likely due to operational difficulties at the facility (i.e., spills in the lube terminal, or pumping of oil from the racks directly into the west side separator), rather than to poor performance by the water treatment units. Another potential contribution to this problem is insufficient stormwater retention capacity, particularly on the west side of the facility, overloading the API Separator at the WSTP.

OIL/GREASE DATA

(January 1987 - March 1988)





TOTAL SUSPENDED SOLIDS (TSS)

In addition to removing oil and grease, DAF and sand filter beds are generally effective in removing suspended solids from wastewater, and are designed to achieve approximate TSS levels of 50 to 70 and 80 to 100 mg/l, respectively. Compared with an NJPDES average limit of 175 kg/day, monthly TSS averages for the ESTP and the WSTP are 40 and 105 kg/day, respectively, as illustrated in Figure 3-2. Although it meets NJPDES permit requirements, ESTP effluent quality can be improved, as discussed in Section 5 (Recommendations).

TOTAL/DISSOLVED ORGANIC CARBON

Although the current treatment systems at the Bayonne facility are not designed to remove total/dissolved organic carbon effectively, the monthly average TOC levels in the ESTP and WSTP effluents (184 and 214 kg/day, respectively) do not exceed the NJPDES average limit of 230 kg/day (Figure 3-3). An average of 81% of the TOC at the ESTP and 70% at the WSTP is DOC (Figure 3-4). Identified organic contaminant streams potentially affecting effluent quality are discussed in later sections.

Although TOC levels are not generally exceeded at this facility, permit limit values for various toxic organic compounds are consistently exceeded. These compounds include toluene, ethylbenzene, chlorobenzene, 1,2-dichlorobenzene, and naphthalene. Additional treatment of the ESTP and WSTP effluents, as described in Section 5, may improve this problem.

HIGH PRESSURE SALT WATER (HPSW)

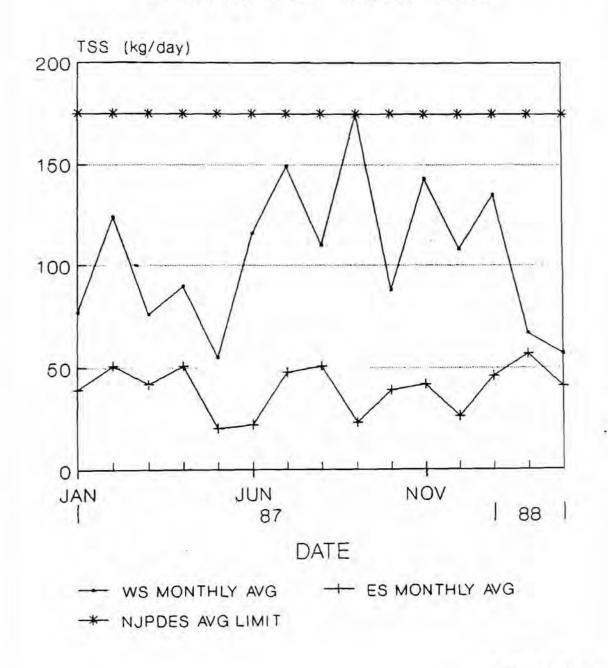
The Bayonne Plant salt water system consists of three pumps supplying salt water from the Kill Van Kull to a piping grid. The system has two main pumps, which operate only during required periods, and a jockey pump (#3), which operates continuously.

The primary use of the salt water system is to supply water for firefighting. The salt water grid is maintained at a constant pressure of 100 psig by Pump #3, supplying high pressure salt water (HPSW) for this purpose. Water flow through this pump is recorded continuously on a circular chart using a Foxboro flow meter.

HPSW is continually used for other purposes as well: backwashing of the sand filter beds and general housekeeping (i.e., tank washouts, equipment cleaning). Documented usage for these purposes is approximated at 160 and 50 gpm, respectively, for a total of 210 gpm. However, the average

TOTAL SUSPENDED SOLIDS

(January 1987 - March 1988)



TOTAL ORGANIC CARBON

(JANUARY 1987 - MARCH 1988)

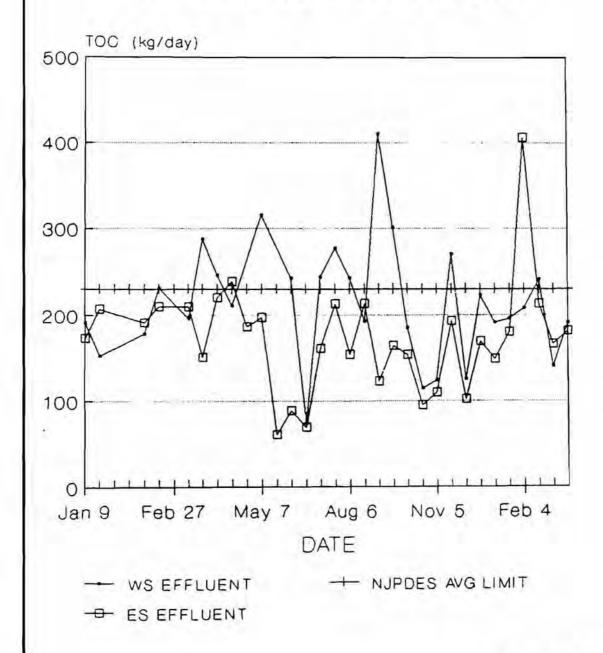
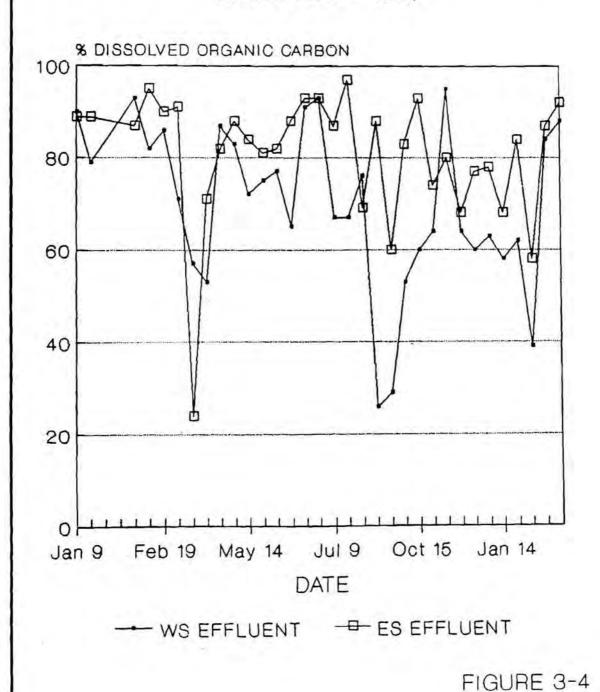


FIGURE 3-3



% DISS. ORGANIC CARBON (DOC/TOC + 100)





HPSW flow, based on the flow meter readings, is approximately 537,000 gallons per day (gpd), or 373 gallons per minute (gpm).

As compared to the overall discharge to the Kill, which is estimated as 1,245,000 gallons per day or 865 gpm, HPSW is a major component of the outfall. However, there does not appear to be a direct correlation between metered HPSW usage and total discharge to outfall (Figure 3-5). [Similar trends (i.e., increase or decrease) can only be observed for 8 out of 15 months of data reviewed (January-March, June, July, October of 1987; January, March 1988).1

Due to the age and extent of underground piping (i.e., there are 125 isolation valves alone in this system), it is believed that salt water probably leaks into the groundwater. Unless HPSW used for backwashing and housekeeping are metered, which is not the current practice, it is not possible to determine the amount of leakage by the salt water system. Incorporating the inaccuracies of the HPSW meter readings and usage estimates, as well as the potential leakage of HPSW into the groundwater, the estimated range of HPSW flow into the EUSA sewer is 210 ± 70 gpm.

CITY WATER/SEPTIC FIELD/CITY SEWERS

The Bayonne Terminal city water consumption is metered throughout the facility, and is utilized in the following areas:

- (1) Fuels terminal
- (2) Asphalt Plant
- (3) Lube terminal
- (4) Wax area(5) Can filling
- (6) Boiler house
- (7) Chemical plant
- (8) Main Building
- Scalehouse (9)
- (10) Main building chemical lab
- (11) Ships lower hook

Various factors place limitations on the accuracy of available city water data. Some city water usage data is based upon allocated, rather than metered quantities. Also, the meters that are used are not regularly calibrated, and may be inaccurate.

All city water to the boiler house is used as boiler feed water (BFW) for steam generation. In 4 of the 15 months analyzed, the steam generated by the boiler house exceeded the amount of BFW indicated on monthly city water

HPSW USAGE VS DISCHARGE

(January 1987 - March 1988)

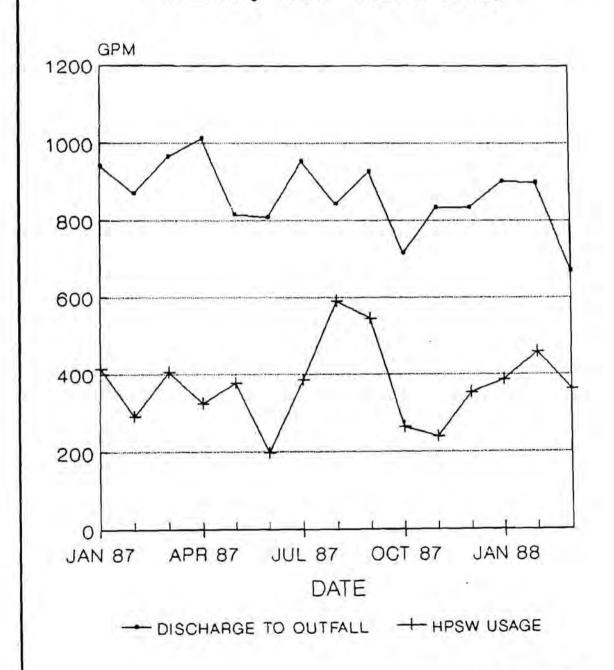


FIGURE 3-5



distribution records maintained by Exxon. Because some city water quantities are allocated rather than metered, it was assumed that the steam information was more accurate. Therefore, BFW and total city water quantities were adjusted for those few months, based upon the plant steam distribution data (Appendix A).

The chemical plant utilizes city water for cooling tower makeup (M/U) and for domestic purposes. Water consumed in the main building and scalehouse is discharged to the city sewer. All other city water, used for domestic purposes, is discharged to various septic tanks.

The average consumption of city water is 419,000 gpd or 291.04 gpm. An overall city water balance is illustrated in Figure 3-6.

SURFACE RUNOFF (RAIN)

The Bayonne Facility does not have a separate stormwater collection system. Stormwater runoff is collected in the oily water sewers. The facility uses equalization tanks (i.e., tank 1059) to hold stormwater during heavy rainfall in an effort to prevent overloading of the treatment units. Observations from plant personnel indicate that current stormwater retention capacity is inadequate during heavy rainfall, particularly on the west side of the facility.

Stormwater runoff is that part of the rainfall that is not lost by infiltration into the soil, or left in surface depressions and on plant surfaces to evaporate. Surface and subsurface conditions affecting these losses are subject to complex variables. One method of approximating the amount of surface runoff is through the use of surface runoff coefficients. Coefficients are primarily dependent upon surface type (or land use), and climatological and seasonal conditions. Based upon site information, runoff coefficients (ranging from 0.4 to 1.0, where 1.0 = 100% runoff) were estimated for the different areas of the facility (Figure 3-7). As an approximation method, all rain was assumed to either run off into the EUSA sewer system, or be lost (either through infiltration or evaporation).

Rain is a major constituent of the overall water balance. Daily rainfall data were collected by site personnel. The average monthly rainfall over the 15-month period studied was 3.21 inches (excluding October, 1987, for which no rainfall data were available). Site rainfall data corresponded with data available from Newark Airport. The average monthly flow of rain on site, based upon a site area of approximately 210.17 acres, was determined to be 598,000 gpd or 414.93 gpm. The average total runoff was calculated as 340,000 gpd or 235.67 gpm. This does not include any

CITY WATER BALANCE

UNITS: GPM (GPD)

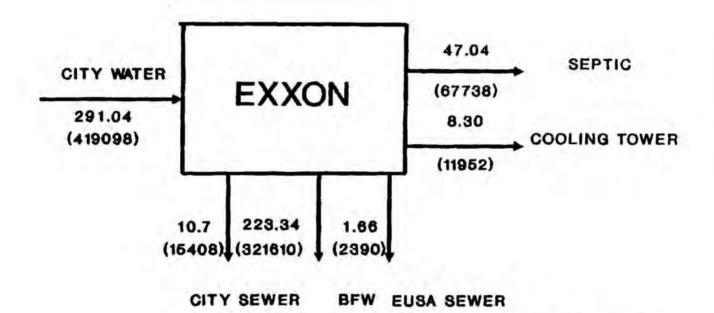
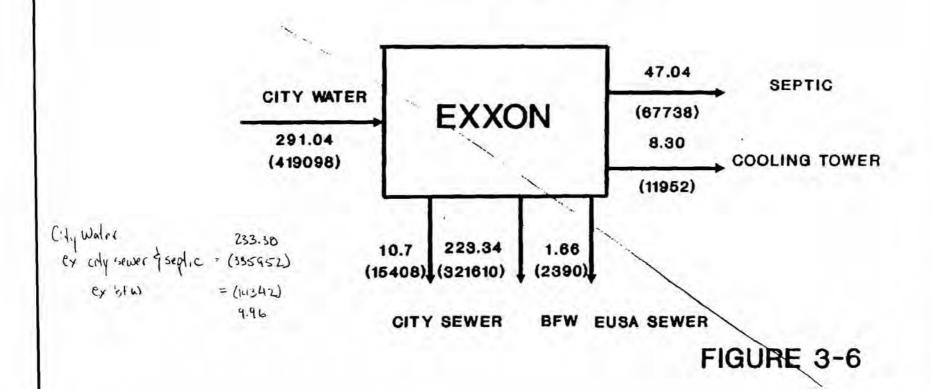


FIGURE 3-6

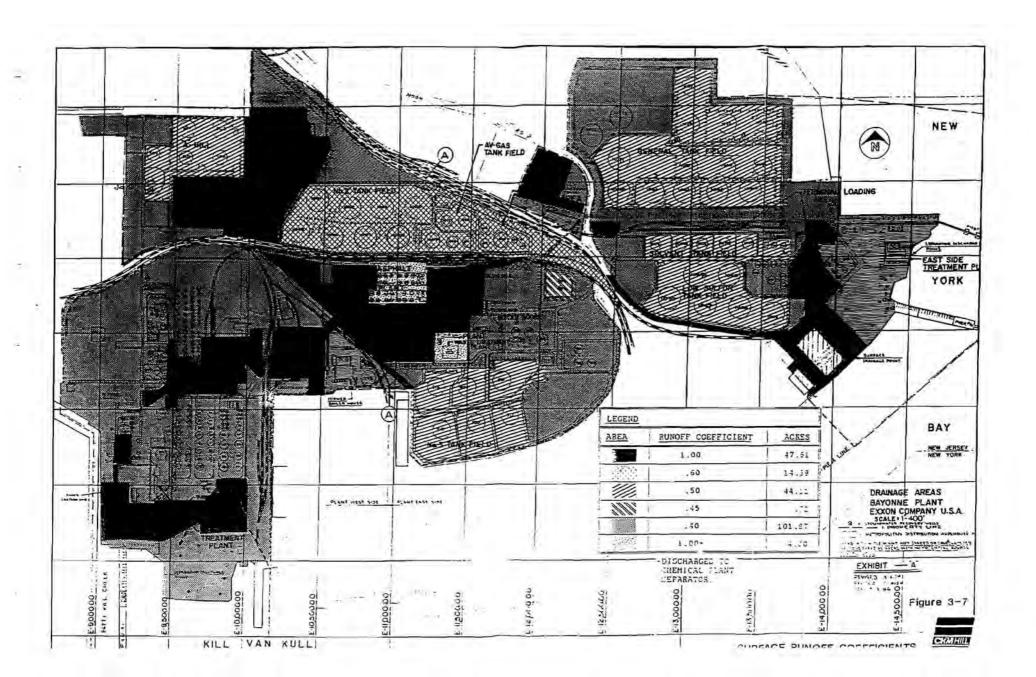


CITY WATER BALANCE

UNITS: GPM (GPD)







potential stormwater surface runoff from neighboring facilities at higher elevations, which cannot be approximated with the available data.

Runoff coefficients were determined as follows:

- (1) For the paved areas designated as main building, specialties plant, tank field south of "A" Hill, WSTP, domestic trade, terminal loading, specialties plant, and chemical plant, a runoff coefficient of 1.0 was used. Two areas of the chemical plant (700 tank field and the chemical plant separator area) are excluded, since runoff from these areas is treated by the chemical plant separator, and then trucked offsite.
- (2) For the dirt- and gravel-covered areas, i.e., all tank fields ("A" Hill, #3 tank field, general tank field, lower sulfur tank field, and solvent tank field), except for the #2 tank field (which has more drainage areas, and runoff coefficient of 0.6), a runoff coefficient of 0.5 was approximated.
- (3) For the areas adjacent to #2 tank field, boiler house, ESTP, WSTP, and 500 tank field, which appear to have more permeable surfaces than those of the tank field areas, a runoff coefficient of 0.4 was estimated.

PRODUCT TANK DEWATERING

Bottoms water from the various tanks onsite is regularly removed and treated at either the ESTP or WSTP, prior to being discharged to the Kill. The appropriate method for dewatering at the Bayonne Plant is to remove the bottoms water using a vacuum truck. This water is then transferred to a holding tank for further gravitational separation of product in the water prior to discharge to the EUSA sewer for treatment. Tanks 507 and 508 are used as holding (or "slop") tanks for the heavier, oily bottoms water, and Tank 1090 is used for holding solvent slop.

Review of the vacuum truck and tank inventory records indicated that other practices for tank dewatering are also employed at Bayonne. It is rather common for product tanks to be dewatered directly into the sewer, without the use of a vacuum truck or holding tank. The data indicated that holding tanks were used in only 22% of all dewatering before discharge to the EUSA sewer.

Approximately 291,600 gallons per month of water are discharged to the EUSA sewer via the tank dewatering process. Although this amounts to only 6.75 gpm, this wastewater stream is a potential contributor to the problems the facility is experiencing with meeting NJPDES permit limits for various organics. This becomes more apparent when a breakdown (by type of tank) of the composition of the dewatering stream is reviewed, as shown in Figure 3-8.

Approximately 65% of this stream is comes from the dewatering of solvent tanks. It should be noted that, as of November 1987, Exxon no longer dewaters the naphtha tanks into the sewer system. Removing the naphtha contribution to the waste stream, dewatering from solvent tanks still comprises approximately 50% of all tank dewatering. Of specific concern, due to the observed levels in the effluent, is the potential release of toluene-contaminated water, which comprises 10% of all dewatering.

PUMPED GROUNDWATER

In the 1970s, the New Jersey Department of Environmental Protection (NJDEP) required EUSA to pump groundwater, due to the presence of floating product under the site. Since then, EUSA has continued to pump groundwater at a groundwater interceptor trench on Hook Road at an approximate rate of 25 gpm or 36,000 gpd. No current monitoring data is available on groundwater quality at the site.

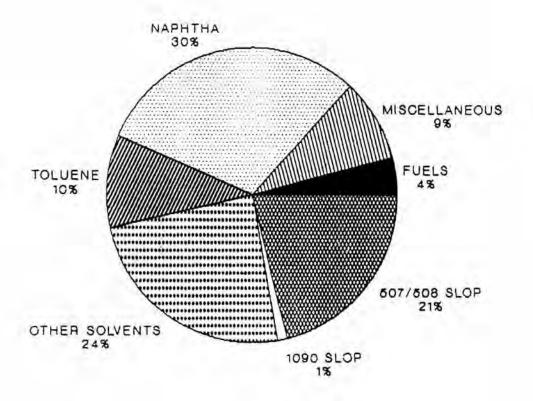
Three additional pumps are used for groundwater pumping. These pumps operate on float control in sumps, primarily during rain periods. Approximately six additional pumps are periodically turned on manually for groundwater pumping. These activities were estimated to contribute 15 gpm of flow to the EUSA sewer.

Therefore, the average groundwater pumping quantity was approximated as 40 gpm or 57,600 gpd.

STEAM

All BFW for steam is produced from city water. Monthly steam distributions are recorded by EUSA, and were incorporated in this steam balance. BFW quantities were adjusted based upon the steam production data, which were believed to be more accurate, as described in the city water section. Because the theoretical steam production was based upon actual steam quantities, steam losses were assumed to be incorporated in the quantities of steam allocated.

PRODUCT TANK DEWATERING



All steam produced is either sold or used internally. Steam is currently sold to the ICI, Powell Duffryn, and Constable Terminal. Steam is used internally in the following areas:

- (1) Chemical plant
- (2) FPT storage
- (3) Asphalt plant
- (4) FPT pier
- (5) FPT racks
- (6) Lube plant
- (7) Wax plant
- (8) Can filling
- (9) ESTP
- (10) WSTP
- (11) Main building

All steam calculations were based upon the boiler house balance provided by EUSA. One hundred ten pounds of city water produce 100 pounds of yard steam. The other 10 pounds of water produce 0.5 pound deaerator vent steam, 1.56 pounds of atomizing steam, 0.12 pound of soot blowing, 4.65 pounds of blow down (B/D), and 3.47 pounds of treatment plant waste. All quantities were prorated from this balance (Figure 3-9). No condensate is assumed to return to the boiler house.

An average of 223.4 gpm or 321,700 gpd of city water is consumed for steam production, generating 202.56 gpm or 291,686 gpd of steam. Of this steam produced, approximately 65% remains onsite for use by the plant. In determining potential condensate return to the EUSA sewer by onsite steam users, the lube, wax, and asphalt areas were found to present most probable return of steam condensate in these areas, based upon their various uses of steam. Twenty-five percent (equivalent to approximately 20 gpm) was estimated as a reasonable return of steam condensate in these areas. The maximum amount of steam condensate potentially entering into the sewer system from these areas, assuming 100% condensate return, is 80 gpm.

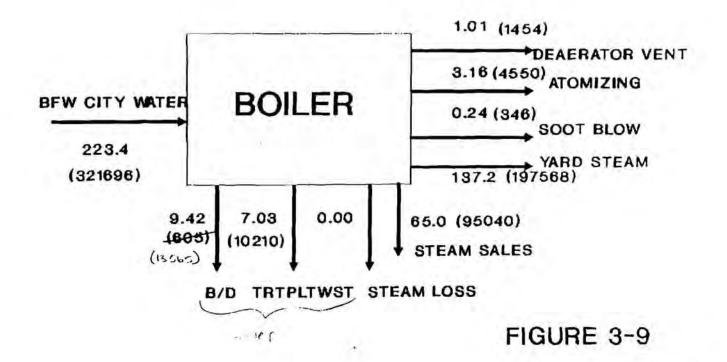
CHEMICAL PLANT

The chemical plant is divided into three major areas: the reactor building, chemical plant separator, and the cooling tower. The water streams at the chemical plant include rainfall, steam used in various process areas, and city water for cooling and domestic purposes (Figure 3-10). The average volumes of rain, steam, and city water entering the chemical plant are 15.70, 38.9, and 15.0 gpm, respectively.

Most of the rain at the chemical plant ends up as surface runoff, and is treated at the ESTP or WSTP. All rain from the chemical plant separator area and the 700 tank field is

EXXON BAYONNE STEAM BALANCE

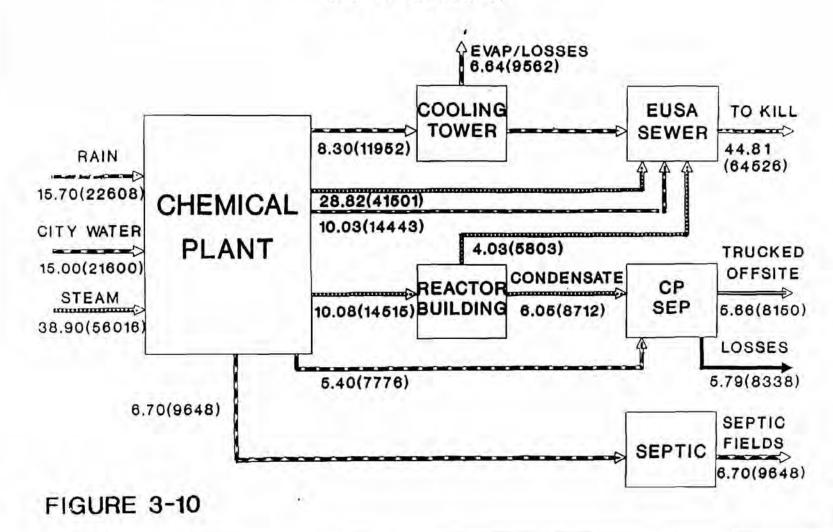
UNITS: GPM (GPD)





CHEMICAL PLANT WATER BALANCE

UNITS: GPM(GPD)



collected separately and treated at the chemical plant separator, and then trucked offsite.

Total steam used at the chemical plant is based on an allocated amount from EUSA steam distribution data. Steam is used at the chemical plant building for general purposes (i.e., heat-tracing lines), as well as in the reactor building. The reactor building was estimated to use steam at an average rate of 3.6×10^{9} pounds per month (10.08 gpm).

Steam used for general purposes at the chemical plant condenses onsite and ends up in the EUSA sewer. A condensation rate of 100% was assumed. An estimated 60% of the steam used at the reactor building is sent to the chemical plant separator and is then trucked offsite. The remainder of the steam ends up in the EUSA sewer.

City water usage at the chemical plant is also based on an allocation. City water is used for domestic purposes and for make-up water (M/U) at the cooling tower. Water used for domestic purposes is disposed of through the septic system.

An average of 8.3 gpm of city water is used for M/U; approximately 80% of this is lost through drift or evaporation, 5% is used for cleaning, 5% for hot oil pump cooling, and 10% is B/D. The 20% that is not lost or evaporated is discharged to the EUSA sewer.

The total amount of wastewater trucked offsite is based upon operational data given by plant personnel for the 15-month study period. The difference in the effluent trucked offsite and influent to the chemical plant separator is assumed to be lost or evaporated.

EAST SIDE TREATMENT PLANT OUTFALL

The ESTP consists of an API separator unit, which is a gravity-settling basin, and four sand filter beds. Sand filter beds are backwashed one at a time after 4 hours of operation (time-basis). During backwash, some of the effluent from the three beds remaining in operation is fed through the fourth bed and then returned to the API separator. Because approximately 700-900 gpm of water are required for backwash (as compared to an average flow of 865 gpm through the beds), water from tank 1059 (general and rainwater holding tank) and HPSW are used to supply the additional water.

The metering unit (FIC 101) used for data collection lies in the influent line of the four sand filter beds. Because of this metering configuration, maximum flow is recorded during backwash periods (1/3 of the day, or 2 of every 6 hours of east side separator operation), and minimum flow occurs during times of normal operation (2/3 of the day, or 4 of every 6 hours of operation).

The primary data sources used to calculate outfall were the circular flow charts generated by the two-pen orifice plate meter. Interpretation of the charts was based on the following information (provided by EUSA personnel) and assumptions:

- (1) Backwash takes 30 minutes per sand filter bed, for a total of 2 hours total backwash time.
- (2) Beds are backwashed after every 4 hours of operation.
- (3) Maximum flow recorded on the chart occurs during backwash (1/3 of the day) and minimum flow occurs during normal operation (2/3 of the day).

Using these assumptions, it was determined that the average outfall flow is 865 gpm or 1,245,600 gpd.

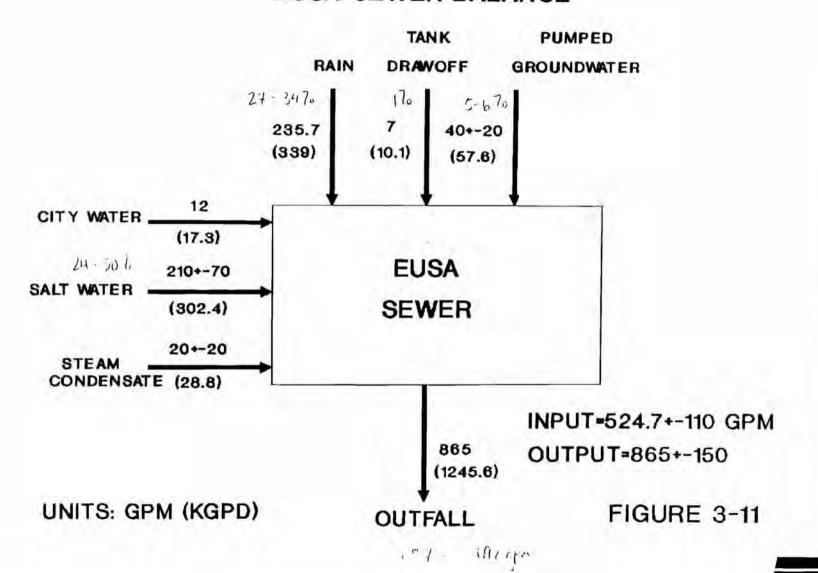
EUSA SEWER BALANCE

Of the various water and wastewater streams present at the Bayonne Plant, rain, steam condensate, tank drawoffs, HPSW, and pumped groundwater are those streams entering the EUSA sewer, potentially impacting the effluent quality (Figure 3-11).

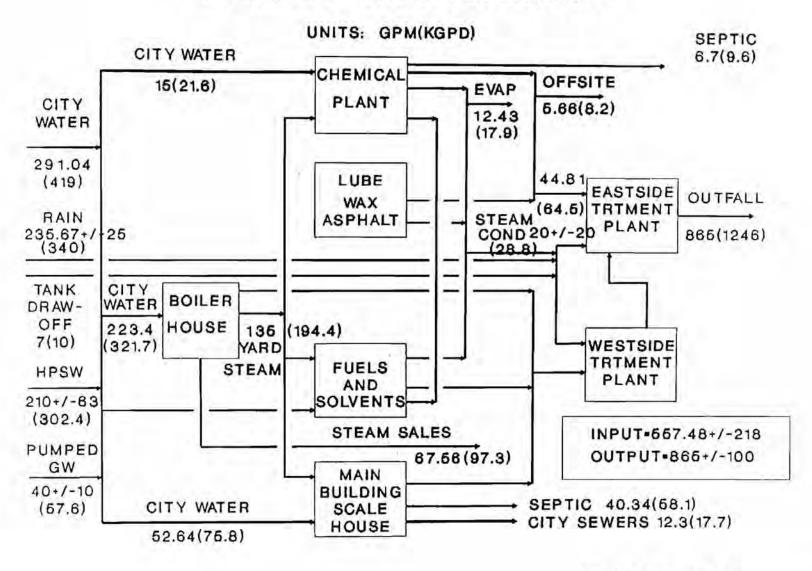
OVERALL WATER BALANCE

Although all the water streams discussed do not directly influence the EUSA sewer, it is important to look at an overall water/wastewater onsite balance. Keeping in mind all the assumptions and estimates incorporated in the development of a plant water balance, and that no flow measurements were made, the balance could not be closed with the existing available information. As shown in Figure 3-12, if the extreme maximum values of the indicated ranges are possible (this assumption is most probably an overestimation of inflow to the EUSA sewer), approximately 200 gpm of outflow cannot be accounted for. Possible explanations to this are discussed in Section 4.

EUSA SEWER BALANCE



OVERALL WATER BALANCE



CHMHILL

Section 4
Conclusions

Section 4 CONCLUSIONS

Based upon the data collection process employed in this study, which included significant contributions of information by site personnel that was not otherwise documented, it can be assumed that the major water streams have been identified and accounted for in the overall balance.

It is apparent that effluent quality is dependent upon many variables at the site, including treatment plant performance, and wastewater quantities and quality. An assessment of the impact of these various factors is presented below.

ESTP AND WSTP PERFORMANCES

Although no influent quality data are currently available, effluent quality data for the WSTP and ESTP appear to indicate good performance by the DAF and sand filter beds. There are operational difficulties and practices at the Bayonne Plant that periodically overload the treatment systems, resulting in a direct discharge of lube rack oil into units.

However, the problem with soluble organic contamination cannot be corrected with the existing treatment systems, which are not designed for removing organics.

Recommendations for additional treatment are presented in Section 5.

HPSW IMPACT

Although HPSW is a major component of the discharge to the EUSA sewer, it is not possible to see a correlation between salt water usage and outfall quantities, as measured by the flow meters. Better documentation of HPSW usage throughout the plant and HPSW quality may give a better indication of the impact of HPSW on outfall quality. This additional information can be acquired with using additional meters at points of HPSW usage, calibration of the current meter used, as well as analytical testing of the HPSW used on site. Recommendations for additional analysis of the outfall quality, specifically to help determine the contributions of the HPSW, are discussed in Section 5.

SURFACE RUNOFF IMPACT

Stormwater collection methods at the site can be improved. Many of the runoff areas are connected and empty directly into loading cars. There is also a problem with

insufficient stormwater storage capacity during heavy rainfall, particularly on the west side of the facility. Problems with incidental spills (i.e., overflows while sampling tanks) and general housekeeping practices (i.e., proper disposal of residual wastes at the site) affect the quality of runoff from the site. A better collection system, as well as additional retention capacity, will decrease overloads of the ESTP and WSTP separators.

PRODUCT TANK DEWATERING IMPACT

Although product tank dewatering appears to contribute a relatively insignificant amount of wastewater to the EUSA sewer, this activity is likely to affect outfall effluent quality the greatest. Most of the tanks are currently being dewatered directly into the sewer, bypassing the use of a vacuum truck. This practice is not recommended, due to an increased risk of discharge of product, rather than water, into the system. The amount of potentially contaminated water represents a significant portion of drawoff water. This may cause high levels of solvents in the outfall. This stream should be segregated from other waste streams or pretreated prior to discharge, as described in Section 5.

It is interesting to note that most tank dewatering activity is concentrated at the end of the month (as part of the tank inventory process). The timing and concentration of this activity are other variables affecting effluent quality.

GROUNDWATER/PUMPED GROUNDWATER IMPACT

Without sufficient groundwater quality data, it is not possible to accurately assess the impact of pumped groundwater on outfall quality. The effects of this stream, like that of product tank dewatering, appear to be deceptively low. This stream needs to be analyzed qualitatively, and an appropriate pretreatment method employed before discharge to the treatment systems; the groundwater should also be monitored, as recommended in Section 5.

Based upon the state of the existing sewer system, and the fact that the water table is higher than 5 feet in most areas, groundwater is probably infiltrating into the sewer. This is a potential source in the overall balance that cannot be measured with the current information. Recommendations for determining this unknown variable are discussed in Section 5.

IMPACT OF NEIGHBORING FACILITIES

Because of the site topography, the density of other nearby activities, and the high onsite usage of Kill water, activities of the neighboring facilities have some impact on the site. For example, the site is known to receive runoff from neighbors at higher elevations, i.e., former Stauffer Chemical property. Other events (e.g., the Gordon Terminal fire, where high ethylene glycol concentrations from the fire foam appeared in Bayonne's sewer system) have proven this fact. Unfortunately, these occurrences can only be documented, but not prevented. Additional groundwater information may be essential in assessing this impact.

NJR9/060 4-3

APPENDIX H

Previous ECRA submission for any part of the site:

Triggering Event: Termination of operations of Exxon Chemical

Americas plant operations

ECRA Case Number: 92727

Date of Submission: Application for Letter of Non-applicability -

February 11, 1991

Application for Letter of Non-applicability -

November 6, 1992

General Information Statement (GIS) -

December 14, 1992

Site Evaluation Survey (SES) -

January 15, 1993

Status: Based upon conversations between Mr. Paul F.

Liebman (Exxon) and Ms. Janice Bolden (NJDEPE/ECRA) and Mr. James Bono (NJDEPE/ECRA), ECRA notice and filing

requirements of ACO paragraph 109 have been

met.

APPENDIX I PERMITS

APPENDIX I

CONTENTS

	Page
PERM	TTS I-1
	ATTACHMENTS
I-I.	New Jersey Pollutant Discharge Elimination System. Permit Number NJ0002089 (Expiration Date 1995).
I-II.	Application for a New Jersey Pollutant Discharge Elimination System Discharge to Groundwater Permit (1989).
I-III.	Exxon, U.S.A. Permit Expiration Report (1991).
I-IV.	State of New Jersey Department of Environmental Protection, Division of Water Resources Monitoring Well Permit (September 24, 1992).

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APPENDIX I

PERMITS

The following section has been prepared for the November 27, 1991 Administrative Consent Order (ACO) Appendix B, Section IIB, Item 9. In addition, a discussion on permits is provided in the Geraghty & Miller, Inc. Site History Report submitted concurrently with these ACO Site History Deliverables.

The Exxon Company Plant, Bayonne, New Jersey has the following attached permits permit applications, and permit information:

- I-I. New Jersey Pollutant Discharge Elimination System, Permit Number NJ0002089 (Expiration Date 1995).
- I-II. Application for a New Jersey Pollutant Discharge Elimination System
 Discharge to Groundwater Permit (1989).
- I-III. Exxon, U.S.A. Permit Expiration Report (1991).
- I-IV. State of New Jersey Department of Environmental Protection, Division of Water Resources Monitoring Well Permit (September 24, 1992).

ATTACHMENT I-I

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NUMBER NJ0002089 (EXPIRATION DATE 1995)

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	Eilindnation System			
The second secon	Fig. 100 - 4 First Stand Communication (1) - 2 The same stands of the stand of the			
PERMIT NUMBER	NJ0002089			
Permittee	Co-Permittee			
250 EAST 22ND STREET PO BOX 9000 BAYONNE NJ 07002-9000				
Property Owner	Location of Activity EXXON CO USA-BAYONNE PLANT 250 EAST 22ND STREET BAYONNE NJ 07002-9000 Issuance Effective Expiration Date Date Date			
EXXON CO USA 250 EAST 22ND STREET PO BOX 9000 BAYONNE NJ 07002-9000				
Current Authorization Covered By This Approval And Previous Authorization				
B :IND/COMMERCIAL SURFACE WATER 05 :GROUP I - STORMWATER RUNOFF C :THERMAL SURFACE WATER DISCH	Issuance Effective Expiration Date Date Date 06/22/1990 08/01/1990 07/31/1995 06/22/1990 08/01/1990 07/31/1995 06/22/1990 08/01/1990 07/31/1995 CLASSIFICATION:SE3 CLASSIFICATION:SE3 JOHN F. FIELDS. ACTING ASSISTANT DIRECTOR WASTEWATER FACILITIES MANAGEMENT ELEMENT PDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPDESNJPD			
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STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

GENERAL CONDITIONS FOR ALL NUPDES DISCHARGE PERMITS

. 1. Duty to Comply

- A. The permittee shall comply with all conditions of this New Jersey Pollutant Discharge Elimination System (NJPDES) permit. No pollutant shall be discharged more frequently than authorized or at a level in excess of that which is muthorized by the permit. The discharge of any pollutant not specifically authorized in the NJPDES permit or listed and quantified in the NJPDES application shall constitute a violation of the permit, unless the permittee can prove by clear and convincing evidence that the discharge of the unauthorized pollutant did not result from any of the permittee's activities which contribute to the generation of its vastevaters. Any permit noncompliance constitutes a violation of the New Jersey Nater Pollution Control Act (N.J.S.A. 58:10A-1 et seq.; hereinafter referred to as the State Act) or other authority of the NJPDES regulations (N.J.A.C. 7:16A-1 et seq.) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit reneval application.
- B. A permittee shall not achieve any effluent concentration by dilution. Nor shall a permittee increase the use of process water or cooling water or otherwise attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve permit limitations or water quality standards.
- C. The permittee shall comply with applicable effluent standards or prohibitions established under Section 307 (a) of the "Federal Water Pollution Control Act" (PL 92-500 et seq.; hereinafter referred to as the Federal Act) and Section 4 of the State Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- D. The State Act provides that any person who violates a permit condition implementing the State Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who villfully or negligently violates permit conditions implementing the State Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both.
- E. The permittee is required to comply with all other applicable federal, state and local rules, regulations, or ordinances. The issuance of this permit shall not be considered as a valver of any other requirements.

Permit Expiration

This permit and the authorization to discharge shall expire at midnight on the expiration date of the permit. The permittee shall not discharge after the above date of expiration of the permit.

a. Duty to Reapply. If the permittee wishes to continue an activity regulated by a NJPDES permit after the expiration date of the permit, the permittee shall apply for and obtain a new permit. (If the activity is to be continued, the permittee shall complete, sign, and submit such information, forms, and fees as are required by the Department no later than 180 days before the expiration date.) The permittee shall follow the requirements stated in paragraph 12.A. when signing any application.

B. Continuation of Expiring Permits

- The conditions of an expired permit are continued in force pursuant to the "Administrative Procedure Act," N.J.S.A. 52:148-11, until the effective date of a new permit if:
 - a. The permittee has submitted a timely and complete application for renewal as provided in Sections 2.1 and (3.2 DSW) (4.4 INMF) (5.8 UIC) and Subchapter 10 of the NJPDES Regulations; and
 - b. The Department through no fault of the permittee, does not issue a new permit with an effective date under Section 8.6 of the NJPDES Regulations on or before the expiration date of the previous permit (e.g., when issuance is impracticable due to time or resource constraints).
- (2) Permits continued under this section remain fully effective and enforceable.
- (3) Enforcement. When the permittee is not in compliance with the conditions of the expiring or expired permit the Department may choose to do any or all of the following:
 - a. Initiate enforcement action based upon the permit which has been continued;
 - b. Issue a notice of intent to deny the new permit under Section 8.1 of the NJPDES Regulations. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;
 - c. Issue a new permit under Subchapters 7 and 8 of the NJPDES Regulations with appropriate conditions; or
 - d. Take other actions authorized by the NJPDES Regulations or the State Act.

3. Duty to Halt or Reduce Activity

- A. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- B. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or discharges or both until the facility is restored to its permitted limits or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost.

4. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit, including but not limited to accelerated and/or additional types of monitoring, temporary repairs or other mitigating measures.

Proper Operation, Maintenance and Licensing

A. The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment works, facilities, and systems of treatment and control (and related appurtenances) for collection and treatment which are installed or used by the permittee for

CHECKLIST OF PARTS AND MODULES COMPRISING THIS NAPPLES PERMIT

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1.	Corer Page						
2.	Checklist						
3.	Part I (General Conditions for All MJPDES Discharge Permits)						
4.	Part II - Additional General Conditions for the types of MJPDES Permits checked as follows:						
	Part II - A (hmicipal/Senitary)						
	V Part II - B/C (Industrial/Commercial/Thermal)						
	Part II - L (SIU)						
	Part II - INCT (Industrial Haste Hanagement Facility)						
	Part II - DGN Specify type(s):						
5.	Part III - Effluent Limitations and Monitoring Requirements						
	Part III - A						
	V Part III - B/C						
	Part III - L						
	Part III - DGW Specify type(s):						
	Fact III - Jun Specif Option						
							
6.	Part IV - Special Conditions						
	Part IV - A	100					
	Part IV - B/C						
	Part IV - L						
	Part IV - DRF						
	Part IV - DGN Specify type(s):						
	✓ Pirt II-3(4(L)						
	- Part II - RESIDUALS						
	Fart W - Residence						

water pollution control and abatement to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes but is not limited to effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training and adequate laboratory and process controls including appropriate quality assurance procedures as described in 40 CFR Part 136 and applicable State Law and regulations. All permittees who operate a treatment works, except for sanitary landfills and land application of sludge or septage, must satisfy the licensing requirements of the "Licensing of Operators of Wastewater and Water Systems" N.J.S.A. 58:11-64 et seq. or other applicable law. This paragraph requires the operation of back-up or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit or where required by applicable law or regulation.

B. Facilities Operation and Operator Certification. The operation of any treatment works shall be under the supervision of an operator on the first day of operation of the treatment works and continually thereafter in accordance with paragraph 5.A above. The operator shall neet the requirements of the Department of Environmental Protection of the State of New Jersey pursuant to the provisions of N.J.S.A. 58:11-64 et seq. and amendments thereto. The name of the proposed operator shall be submitted to this Department in order that his qualifications may be determined prior to inititating operation of the proposed treatment works.

6. Permit Actions

- A. This permit may be modified, suspended, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- B. Causes for modification, revocation and reissuance, and suspension are set forth in N.J.A.C. 7:14A-2.12 et seg.
- C. The following are causes for terminating or modifying a permit during its term, or for denying a permit renewal application:
 - [1] Noncompliance by the permittee with any condition of the permit;
 - (2) Failure to pay applicable fees (N.J.A.C. 7:14A-1.8), including the annual NJPDES permit fee which has been assessed by the New Jersey Department of Environmental Protection (NJDEF, hereinafter referred to as the Department);
 - (3) The permittee's failure in the application or during the permit issuance process of a National Pollutant Discharge Elimination System (NPDES), Discharge Allocation Certificate (DAC), NUPDES, Treatment Works Approval (TWA) or Construct and Operate permit to disclose fully all relevant facts, or the permittee's misrepresentation of any permit condition;
 - (4) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
 - (5) When there is a change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit (for example, plant closure or termination of discharge by connection to a Domestic Treatment Works (DTW);
 - (6) The nonconformance of the discharge with any applicable facility, basin or areawide plans;

- (7) If such permit is inconsistent with any duly promulgated effluent limitation, permit, regulation, statute, or other applicable state or federal law; or
 - (8) If a toxic effluent standard or prohibition is established pursuant to New Jersey Water Pollution Control Act N.J.S.A. 58:10A-1 et seq. or the regulations adopted pursuant to it, for a toxic pollutant which is present in the discharge, and such is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified of the revision or modification and date of required compliance.

7. Property Rights, Liability, and Other Laws

- A. This permit does not convey and property rights of any sort or any exclusive privileges.
- B. Nothing in this permit shall be deemed to preclude the institution of any legal action nor relieve the permittee from any responsibilities or penalties to which the permittee is or say be subject to under any federal, state or local law or regulation.
- C. Nothing in this permit shall be construed to exempt the permittee from complying with the rules, regulations, policies, and/or laws lodged in any agency or subdivision in this State having legal jurisdiction.

8. Duty to Provide Information

- A. The permittee shall furnish to the Director, Division of Water Resources, NJDEP, (bereinafter referred to as the Director), within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, suspending, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- B. Where the permittee becomes aware that he has failed to submit may relevant facts in a permit application, or has submitted incorrect information in a permit application or in any report to the Director, the permittee shall promptly submit such facts or information.

9. Inspection and Entry

- A. The permittee shall allow the Regional Administrator of the United States Environmental Protection Agency (USEPA), the Department, or any authorized representative(s), upon the presentation of credentials and other documents as may be required by law, to:
 - (1) Enter upon the permittee's premises where a discharge source is or might be located or in which monitoring equipment or records required by a permit are kept, for purposes of inspection, sampling, copying or photographing. Photography shall be allowed only as related to the discharge;
 - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - (3) Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - (4) Sample or monitor, at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the State Act, any substances or parameters at any location. This shall include, but not be limited to, the drilling or installation of monitoring wells for

the purpose of obtaining samples of ground water, soil and wegetation and measuring ground water elevations.

- B. Any refusal by the permittee, facility land owner(s), facility lessee(s), their agents, or any other person(s) with legal authority, to allow entry to the authorized representatives of the NUDEF and/or USEFA shall constitute grounds for suspension, revocation and/or termination of this permit.
- C. By acceptance of this permit, the permittee hereby agrees, consents and authorizes the representatives of the NUDEP and/or USEPA to present a copy of this permit to any municipal or state police officer having jurisdiction over the premises occupied by the permittee in order to have said officer effectuate compliance with the right of entry, should the permittee at any time refuse to allow entry to said inspectors.
- D. By acceptance of this permit, the permittee valves all rights to prevent inspections by authorized representatives of the NJDEP and/or USEPA to determine the extent of compliance with any and all conditions of this permit and agrees not to, in any manner, seek to charge said representatives with the civil or criminal act of trespass when they enter the premises occupied by the permittee in accordance with the provisions of this authorization as set forth hereinabove.

10. Ground Water Monitoring Wells

The permittee shall install and maintain ground water monitoring wells if required by this permit at locations and according to specifications provided by the Department. All permit required monitoring wells shall be installed within 30 days of the Effective Date of the Permit. The monitoring wells shall provide turbidity-free water at a minimum rate of two gallons per minute or what the formation will yield with a properly installed and developed ground water monitoring well.

When a monitoring well cannot be used for the purpose of sample collection or ground water level measurements, the permittee shall replace the well at his own expense within 30 days of the missed sampling und/or measurement date. Said unuseable wells shall be sealed, also at the permittee's own expense, in accordance with Department well sealing specifications within the same 30 day period in which the well is replaced. Monitoring wells as required in this permit shall be considered as a monitoring device, which are required to be maintained under the provisions of the New Jersey Water Pollution Control Act N.J.S.A. 58:10A-10(f).

All monitoring wells must be installed by a New Jersey licensed well driller. The elevation to the nearest hundredth of a foot of the top of each well casing shall be established by a New Jersey licensed land surveyor within 30 days of the installation of the monitoring wells. The elevation established shall be in relation to the New Jersey geodetic control datum. Ground water monitoring wells and all point source discharges to ground water shall be located by horizontal control (latitude and longitude) using third order work, class II specification and by vertical control (elevation) using third order work. Within 30 days of the installation date of the monitor well, the permittee shall submit to the Department completed "Ground Water Monitoring Well Certifications - Forms A and B for each well required to be sampled by the permit. Within 60 days of the Effective Date of the Permit, the permittee shall submit to the Department a plot plan of the facility showing the location of all discharges and the ground water monitoring well locations. The scale of the plot plan shall be at least one inch equals fifty (50) feet.

Each ground vater monitoring well casing shall have permanently affixed to it a monitoring well number to be assigned by the Department, elevation of the top of the well casing, elevation of the top of the well casing above the ground level and latitude and longitude of the monitoring well.

11. Monitoring and Records

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- B. The State Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of no more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both. This is specifically intended to include, but not be limited to, ground water monitoring wells and lysimeters.
- C. The applicant shall perform all analyses in accordance with the analytical test procedures approved under 40 CFR Part 136. Where no approved test procedure is available, the applicant must indicate a suitable analytical procedure and must provide the Department with literature references or a detailed description of the procedure. The Department must approve the test procedure before it is used. The laboratory performing the analyses for compliance with this permit must be approved and/or certified by the Department for the analysis of those specific parameters. Information concerning laboratory approval and/or certification may be obtained from:

New Jersey Department of Environmental Protection Office of Quality Assurance CN 409 Trenton, New Jersey 08625 (609) 292-3950

- D. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.
- E. Records of monitoring information shall include:
 - (1) The date; exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- F. Monitoring results shall be reported on a Discharge Monitoring Report (DMR) and/or on the Department's Monitoring Report Form (MRF); or, where these forms do not apply, in another format approved by the Department.

- G. If the permittee monitors any pollutant more frequently than required by the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR, MRF, or other approved format.
- H. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.

I. Discharge Monitoring Reports

(1) Monitoring results shall be summarized and reported on the appropriate Monitoring Report Forms following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the following address:

> Mater Quality Management Division of Water Resources CN 029 Trenton, New Jersey 08625 ATTN: Monitoring Reports

- (2) If a contract laboratory is utilized, the permittee shall submit the name and address of the laboratory and the parameters analyzed at the time it submits its monitoring reports (See Section 11.E. above). Any change in the contract laboratory being used or the parameters analyzed shall be reported prior to or together with the monitoring report covering the period during which the change was made.
- J. Monitoring Reports. Monitoring results shall be reported at the intervals and starting date specified elsewhere in this permit.
- K. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

12. Signatory Requirement

- A. Signature Requirements. All permit applications, except those submitted for Class II wells for a UIC discharge (see paragraph B) shall be signed as follows:
 - For a corporation, by a principal executive officer of at least the level of vice president;
 - (2) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
 - (3) For a municipality, state, federal or other public agency, by either a principal executive officer or ranking elected official.
- 8. Reports. All reports required by permits, other information requested by the Department and all permit applications submitted for Class II wells under N.J.A.C. 7:14A-5.8 shall be signed by a person described in paragraph A of this section or by a duly authorized representative only if:
 - (1) The authorization is made in writing by a person described in paragraph A of this section;
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as a position of plant

manager, operator of a well or well field, superintendent or person of equivalent responsibility; and

- (3) The written authorization is submitted to the Department.
- C. Changes to Authorization. If an authorization under paragraph B of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B of this section shall be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. <u>Certification (N.J.A.C. 7:14A-7.4(d))</u>. Any person signing any document under paragraph A or B of this section shall make the following certification: "I certify under penalty of law that I have personally examined and as familiar with the information submitted in this document and all attachments and that, hased on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I as aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."
- E. False Statements. Any person who knowingly makes a false statement, representation, or certification in any application, record, or other document filed or required to be maintained under the State Act shall upon conviction, be subject to a fine of not more than \$10,000.00 or by imprisonment for not more than 6 months or by both.

13. Reporting Changes and Violations

- A. Planned Changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. The permittee shall comply with N.J.A.C. 7:16A-12.' et seq. which requires approval for building, installing, modifying, or operating treatment works. (NOTE: Sewer Extensions require such an approval. A connection of a single building through which less than 2000 gpd flows by gravity through a single leteral is exempt from the requirement to obtain the approval of this Department.). Construction of a sewer extension without this Department's approval will be a violation of this permit.
- B. Anticipated Noncompliance. The permittee shall give reasonable advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

14. Reporting Noncompliance

- A. The permittee shall report any noncompliance which may endanger health or the environment. The permittee shall provide the Department with the following information:
 - (1) A description of the discharge;
 - (2) Steps being taken to determine the cause of noncompliance;
 - (3) Steps being taken to reduce and eliminate the noncomplying discharge;
 - (4) The period of noncompliance, including exact dates and times. If the noncompliance has not been corrected, the anticipated time when the discharge will return to compliance;
 - (5) The cause of the noncompliance; and

- (6) Steps being taken to reduce, eliminate, and prevent reoccurence of the noncomplying discharge.
- B. The permittee shall orally provide the information in paragraphs A.(1) through (3) to the DEP Hotline (609) 292-7172 within 2 hours from the time the permittee becomes aware of the circumstances.
- C. The permittee shall orally provide the information in paragraphs A.(4) through (5) to the DEP Hotline within 24 hours of the time the permittee becomes aware of the circumstances.
- D. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the information in A.(1) through (6).
- E. Other Noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs 11.J, 11.K, 13.A, and 14.A through D at the time monitoring reports are submitted. The reports shall contain the information required in the written submission listed in paragraph 14.D.
- F. The following shall be reported to the Department in accordance with paragraphs 14.A through D:
 - (1) In the case of any discharge subject to any applicable toxic pollutant effluent standard under Section 307(a) of the Federal Act or under Section 6 of the State Act the information required by paragraphs 14.A(1) through (3) regarding a violation of such standard shall be provided to the Department within 2 hours from the time the permittee becomes aware of the circumstances. The information required by paragraphs 14.A(4) through (6) shall be provided to the Department within 24 hours from the time the permittee becomes aware of the circumstances. Where the information is provided orally, a written submission covering these points must be provided within five working days of the time the permittee becomes aware of the circumstances covered by this paragraph.
 - (2) In the case of other discharges which could constitute a threat to buman health, relfare, or the environment, including but not limited to, discharge of pollutants designated under Section 311 of the Federal Act, under Section 6 of the State Act, under the "Spill Compensation and Coptrol Act", N.J.S.A. 58:10-23.11 et seg., or under the "Safe Drinking Water Act", N.J.S.A. 58:12A-1 et seg., the information required by paragraph 14.A(1) through (3) shall be provided to the Department within 2 hours from the time the permittee becomes aware of the circumstances. The information required by paragraphs 14.A(4) through (6) shall be provided to the Department within 24 hours from the time the permittee becomes aware of the circumstances. Where the information is provided orally, a written submission covering these points must be provided within five working days of the time the permittee becomes aware of the circumstances covered by this paragraph.
 - (3) The information required in paragraphs 14.A(1) through (3) shall be provided to the Department within 2 hours where a discharge described under paragraphs 14.F(1) or (2) is located upstream of a potable water intake or well field. The information required by paragraphs 14.A(4) through (6) shall be provided to the Department within 24 hours. If this information is provided orally, a written submission covering these points must be provided within five days of the time the permittee becomes aware of the discharge.
 - (4) Any bypass which violates any effluent limitations in the permit shall be reported within 24 hours unless paragraphs 14.F(1) through (3) are applicable. (See Section 15.)

- (5) Any upset which violates any effluent limitation in the permit shall be reported within 24 hours unless paragraphs 14.F(1) through (3) are applicable. (See Section 16.)
- (6) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit shall be reported within 24 hours unless paragraphs 14.F(1) through (3) are applicable (See N.J.A.C. 7:14A-3.13(a)7.).

15. Bypass

A. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs B. and C. of this section.

B. Notice

- (1) Anticipated Bypass. If the permittee knows in advance of the need for a bypass, he shall submit prior notice, if possible, at least thirty (30) days before the date of the bypass.
- (2) Unanticipated Bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph 14.F.(4).

. C. Probibition of Bypass

- (1) Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass unless:
 - Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - c. The permittee submitted notices as required under paragraph B of this section.
- (2) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in paragraph C.(1) of this section.

16. Upset

- A. Effect of An Upset. An upset may constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B. of this section are met. Where no determination was made during administrative review of claims that noncompliance was caused by upset, and there has been no Departmental action for noncompliance, the lack of such determination is final administrative action subject to judicial review.
- B. Conditions Necessary for A Demonstration of Upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An upset occurred and that the permittee can identify the specific cause(s) of the upset:
- (2) The permitted facility was at the time being properly operated;
- (3) The permittee submitted notice of the upset as required in paragraph 14.F. (5); and
- (4) The permittee complied with any remedial measures required under Section 4 above.
- C. Burden of Proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

17. Emergency Plan (DSH and DGH permits only)

A. The permittee shall develop, submit, and implement an Emergency Plan report prepared in accordance with N.J.A.C 7:14A-3.12(b) unless exempted pursuant to N.J.A.C. 7:14A-3.12(e). If not previously submitted to and approved by NJDEP, the Emergency Plan (or a request for exemption) must be submitted within six (6) months of the effective date of the permit unless otherwise required by N.J.A.C. 7:14A-3.12(a).

B. Liability

- (1) Submission of an Emergency Plan pursuant to this section shall not exempt a permittee from liability for violations arising from an emergency situation. A permittee shall take all necessary actions to mitigate the damage to the waters of the State arising from an emergency situation. Such actions shall not be limited by the emergency operating plan and the manual of procedures.
- (2) Exemption from development of an Emergency Plan under this section does not exempt the permittee from liability for violations arising from an emergency situation. Such permittee shall take all necessary actions to mitigate the damage to the vaters of the State arising from an emergency situation.

C. Violations

failure to submit an emergency plan in compliance with paragraph A. of this section and failure to implement the emergency plan shall each constitute a violation of this permit.

18. Residuals Hanagement

- A. Collected grit and screenings, scuss, sand bed sands, slurries, and sludges, and all other solids from the treatment process shall be disposed of in such a manner as to prevent such materials from entering the ground and/or surface waters of the state except in accordance with a MIPDES permit. If for any reason such materials are placed in the water or on the lands where they may cause pollutants to enter the ground and/or surface waters of the State, the following information shall be reported to the Division of Hater Resources Enforcement Element together with the monitoring data required in Part I, Section 11.1.:
 - (1) Dates of occurrence;
 - (2) A description of the noncomplying discharge (nature and volume);
 - (3) Cause of noncompliance;
 - (4) Steps taken to reduce and eliminate the noncomplying discharge; and

- (5) Steps taken to prevent recurrence of the condition of noncompliance.
- B. If the chosen sludge management method is land application, the permittee must make provisions for storage, or some other approved management strategy, for those periods when land application is prohibited, including but not limited to winter months, or when the ground is frozen or saturated with water. The permittee shall not be permitted to store sludge on-site beyond the capacity of the structural treatment and storage components of the treatment facility, except in accordance with a MUPDIS Emergency On-site storage Permit. Nor shall the permittee be permitted to store sludge on-site in any manner which is not in accordance with Solid Waste Management Rules, M.J.A.C. 7:26-1 et seq. Any violations must be reported by the permittee to the Division of Water Resources Inforcement Element within 24 hours.
- C. The permittee shall comply with the Sludge Quality Assurance Regulations (N.J..A.C. 7:14-4.1 et seq.). Where quality information is required by these regulations analyses must reflect the quality of the final sludge product which the permittee must remove.
- D. The permittee shall manage the sludge from this facility in compliance with the New Jersey Solid Waste Management Act H.J.S.A. 13:1E-1 et seq., which requires conformance with Statewide and District Sludge Management Plans, and prohibits the disposal of municipal sewage s'udge in landfills. The permittee shall also comply with all applicable rules and regulations promulgated pursuant to the Federal Resource Conservation and Recovery Act governing the treatment, storage and disposal of hazardous waste.
- Z. The permittee shall at all times have on file with the Department proof of proper management at a facility duly licensed and permitted by the State to recieve sludge. To satisfy this requirement the permittee shall submit proof of ownership or contractual arrangement with a primitted facility for the composting, land application, thermal reduction, or other approved method of ultimate sludge management.

Where such permitted sludge management does not extend the full term of this permit, the permittee shall submit similar proof of new permitted management arrangements which shall become effective no later than the expiration date of previous arrangements. All such proofs of ultimate management must be submitted to the Euricipal Maste Management in Caplicate to:

Chief Buress of Humicipal Maste Hanagement CM-029 Trenton, N.J. 08625 ATTN: Residuals Hanagement Section

- P. By issuance of this permit the Department bereby gives the permittee notice that the permittee is bound by the New Jersey Pollutant Discharge Elimination System regulations regarding proper sludge management (Section 25 (a)13.).
- G. The permittee shall comply with the provisions concerning management of sludge in the Statewide Sludge Hanagement Flam promulgated pursuant to the Water Quality Flamming Act, IN.J.S.A.

58:11A-1 et seq.), The New Jersey Water Pollution Control Act, (N.J.S.A. 58:10A-1 et seq.) and the Solid Raste Management Act (N.J.S.A. 13:1E-1 et seq.).

H. The permittee shall conform with the requirements under Section 405 of the Federal Act governing the management of sewage sludge from publicly owned treatment works and with Sections 4 and 6 of the State Act.

19. Discharge Permitted



The permittee shall discharge to surface waters, land or ground waters of the State, directly or indirectly, only as authorized berein and consistent with the terms and conditions of this permit.

20. Operation Restrictions

The operation of a waste treatment or disposal facility shall at no time create: (1) a direct discharge to surface waters of the State, except as authorized by NUDEP; (2) a persistent standing or ponded condition for water or waste on the permittee's property except as specifically authorized by this permit, or (3) any standing or ponded condition for water or waste on adjacent properties unless these activities are specifically included within the permit.

21. Oil and Hazardous Substance Liability

The imposition of responsibilities upon, or the institution of any legal action against the permittee under Section 311 of the Federal Act shall be in conformance with regulations promulgated pursuant to Section 311 of the Federal Act governing the applicability of Section 311 to discharges from facilities with NPDES permits.

22. Reopener Clause for Toxic Effluent Limitations

Hotwithstanding any other condition of this permit, if any applicable toxic effluent standards, limitation or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Federal Clean Mater Act or Sections 4 or 6 of the State Act for a toxic pollutant and that effluent standard, limitation, or prohibition is more stringent than any limitation on the pollutant in the permit (or controls a pollutant not limited in the permit), this permit shall be promptly modified or rewoked and reissued to conform to that effluent standard, limitation or prohibition.

23. Availability of Information

- A. NJPDES permits, effluent data, and information required by NJPDES application forms provided by the Regional Administrator or Director (including information submitted on the forms themselves and any attachments used to supply information required by the forms) shall be available for public inspection at the offices of the Director.
- B. In addition to the information set forth in paragraph A., any other information submitted to EPA and/or the Department in accordance with the conditions of this permit shall be made available to the public without further notice unless a claim of business confidentiality is asserted at the time of submission in accordance with the procedures in 40 CFR Part 2 (Public Information)

- and/or Subchapter 11 of the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System."
- C. If a claim of confidentiality is made for information other than that enumerated in paragraph A., the information shall be treated by the Department in accordance with the procedures in N.J.A.C. 7:14A-11.1 et seq. Only information determined to be confidential under those procedures shall not be made available by NUDEP for public inspection.

24. Effective Date of Permit

- A. This permit shall become effective in its entirety on the date indicated (Effective Date) on the first page of this permit unless a request for an adjudicatory hearing is granted pursuant to the provisions of N.J.A.C. 7:14A-8.11 et seq.
- B. For purposes of judicial review, final agency action on a permit does not occur unless and until a party bas exhausted its administrative remedies under N.J.A.C. 7:14A-8.9 et seq. Any party which neglects or fails to seek such review thereby waives its opportunity to exhaust available agency remedies.

25. Transfer of Permit

- A. This permit is not transferable to any person except after notice to the Department. The Department may require modification, revocation, or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the appropriate Act. (See N.J.A.C. 7:14A-2.12; in some cases, modification or revocation and reissuance is mandatory).
- B. Transfer by Modification. Except as provided in paragraph (C) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under Section 2.12(c)1.ii.) or a minor modification made (under Section 2.14(a)4. of the NJPDES Regulations), to identify the new permittee and incorporate such other requirements as may be necessary under the State and Federal Acts.
- C. <u>Automatic Transfers</u>. As an alternative to transfers under paragraph (B) of this section, any NJPDES permit, except a UIC permit for a well injecting hazardous waste, may be automatically transferred to a new permittee if:
 - The current permittee notified the Department in writing by certified sail of the proposed transfer as follows:
 - a. Where production levels, products produced, rates of discharge, and wastevater characteristics will remain unchanged, the following information shall be submitted at least 90 days prior to a proposed transfer date:
 - (1) Name and address of current facility;
 - (2) Name and address of new owners;
 - (3) NUPDES permit number;
 - (4) Names of the new principal persons responsible;
 - (5) Names of persons upon whom legal process can be served; and

- (6) A notarized statement signed by the new principal officer stating that he has read the NJPDES permit and agrees to abide by all the conditions of the permit and that the production levels, products produced, rates of discharge, and wastewater characteristics will remain unchanged.
- b. Where there will be a change in production levels, products produced, rates of discharge, or vastewater characteristics, the information required in paragraph 25,C(1)(a)above shall be submitted at least 180 days prior to a proposed transfer date.
- (2) The current permittee shall include in the notice of proposed transfer a written agreement between the existing and new permittee which includes a specific date for transfer of permit responsibility, coverage, and liability between the parties. In the case of a UIC permit, the notice shall demonstrate that the financial responsibility requirements of Section 5.10(a)7, of the NJPDES Regulations will be set by the new permittee;
- (3) The Department does not notify the existing permittee and the proposed new permittee, within thirty (30) days of receipt of notice of proposed transfer, of an intent to modify, revoke or revoke and reissue the permit or, for a discharge to surface water (DSW), require a DAC. A modification under this paragraph may also be a minor modification under Section 2.14 of the NJFDES Regulations. If such notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 25.C(2) of this section; and
- (4) Whenever the regulated discharge has ceased prior to the proposed permit transfer, any compliance schedule shall not be automatically reinstated but shall be subject to revision or complete withdrawal if circumstances leading to its imposition have changed.

16. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of are provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

27. Stay of Conditions, N.J.A.C. 7:14-8.10

A request for an adjudicatory bearing shall not automatically result in a stay of the conditions of this permit.

28. Definitions

- A. Unless otherwise stated, all terms shall be as defined in the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System", N.J.A.C. 7:14A-1 et seq.
 - (1) "Aliquot" means a sample of specified volume used to make up a total composite sample.
 - (2) "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.
 - (3) "Composite" means a combination of individual (or continuously taken) samples (aliquots) of at least 100 milliliters, collected at periodic intervals over the entire discharge day. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. For a continuous discharge, a minimum of 24

aliquots (at hourly intervals) shall be collected and combined to constitute a 24-hour composite sample. For intermittent discharges of more than 4 hours duration, aliquots shall be taken at a minimum of 30-minute intervals. For intermittent discharges of less than 4 hours duration, aliquots shall be taken at a minimum of 15-minute intervals.

- (4) "EDP" means Effective Date of Permit.
- (5) "Grab" means an individual sample of at least 100 milliliters collected over a period not exceeding 15 minutes.
- (6) "Monthly" means one day each month (the same day each month) and a normal operating day (e.g., the 2nd Tuesday of each month).
- (7) "Multiple Grab Composite" means a combination of individual samples (aliquots) collected at a specified frequency over a specified time period. Each aliquot must be collected in a glass vial with septum cap, filled to the top leaving no air bubbles, and iced until delivered for analysis. Each aliquot shall be analysed individually. The recorded value will be flow proportioned average of the individual analyses for the specific time period.
 - (8) "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
 - (9) "Weekly" means every seventh day (the same day each week) and a normal operating day.

29. Annual Permit Fee, N.J.A.C. 7:14A-1.8

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The pormittee shall pay the annual NJPDES permit fee which has been assessed by the Department.

WOM122- JOWH: fmm

Revised 1/24/86

1.A EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning EDP and lasting through December 31, 1990 the permittee is authorized to discharge from the outfall(s) serial number(s): DSN 001, Eastside Treatment Plant.

There shall be no discharge of floating solids or visible foam in other than trace amounts. There shall be no visible sheen.

The abbreviation 'N/A', in the table below denotes 'Not Applicable' while the abbreviation 'NL', denotes 'Not Limited' with both monitoring and reporting required.

Samples taken in compliance with the specified monitoring requirements shall be taken at the discharge from the effluent chamber identified as DSN 001; and shall be reported monthly.

EFFLUENT CHARACTERISTIC	400	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS	
All units are in mg/l	Daily	Monthly	Daily	Frequency		
unless otherwise specified	Minimum	Average	Maximum			
Flow, Intake (MGD)	N/A	NL	NL	Continuous	202	
Flow, Effluent (MGD)	N/A	NL	3.024	Continuous	222	
Total Suspended Solids, net	N/A	NL	50	2/Month	Composite (1)	
Total Organic Carbon (kg/d)	N/A	314.4	586.5	2/Month	Composite	
Oil and Grease, net	N/A	10	15	Weekly	Grab	
Chlorobenzene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)	
Ethylbenzene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)	
Toluene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)	
Napthalene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)	
1,2-Dichlorobenzene (ug/1), ne	t N/A	NL	NL	Monthly	Grab (1)	
Priority Pollutant Scan (ug/1)		NL	NL	Quarterly	Grab (2)	
Temperature (°F)	N/A	NL	98.3	Weekly	Grab	
pH (Standard Units)	6.0	N/A	9.0	Monthly	Grab	
	C50≥50%	N/A	N/A	See Part I	V - B/C	
Chronic Toxicity	NL	N/A	N/A	See Part I	V - B/C	

(1) To calculate the reported net values at outfall 001:

CF = Conversion Factor = 0.003785 MASS INTAKE, kg/d = (Flow at Surface Intake, mgd) x (Conc. at Surface Intake, ug/l) x CF MASS at 001, kg/d (net) = MASS at 001, kg/d (gross) - MASS INTAKE, kg/d

MASS at 001, kg/d (net) = Net Reported 001 Concentration, ug/1 Flow at 001, mgd x (CF)

(2) Monitor all pollutants listed in N.J.A.C. 7:14A-Appendix B Tables II & III except Pesticides.
Samples shall be grab for the volatile fraction and 24-bour composite for all other fractions.

1.B EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning January 1, 1991 and lasting through EDP + 5 years the permittee is authorized to discharge from the outfall(s) serial number(s): DSN 001, Eastside Treatment Plant.

There shall be no discharge of floating solids or visible foam in other than trace amounts. There shall be no visible sheen.

The abbreviation 'N/A', in the table below denotes 'Not Applicable' while the abbreviation 'NL', denotes 'Not Limited' with both monitoring and reporting required.

Samples taken in compliance with the specified monitoring requirements shall be taken at the discharge from the effluent chamber identified as DSN 001; and shall be reported monthly.

EFFLUENT CHARACTERISTIC		DISCHARGE LIMIT	ATIONS	MONITORING	REQUIREMENTS
All units are in mg/l unless otherwise specified	Daily Minimum	Monthly Average	Daily Maximum	Frequency	Sample type
Flow, Intake (MGD)	N/A	NL	NL	Continuous	1422
Flow, Effluent (MGD)	N/A	NL	3.024	Continuous	
Total Suspended Solids, net	N/A	NL	50	2/Month	Composite (1)
Total Organic Carbon (kg/d)	N/A	314.4	586.5	2/Month	Composite
Oil and Grease, net	N/A	10	15	Weekly	Grab
Chlorobenzene (ug/1), net	N/A	NL	380	Monthly	Grab (1)
Ethylbenzene (ug/1), net	N/A	NL	380	Monthly	Grab (1)
Toluene (ug/1), net	N/A	NL	74	Monthly	Grab (1)
Napthalene (ug/1), net	N/A	NL	47	Monthly	Grab (1)
1,2-Dichlorobenzene (ug/1), ne	t N/A	NL	794	Monthly	Grab (1)
Priority Pollutant Scan (ug/1)		NL	NL	Quarterly	Grab (2)
Temperature (°F)	N/A	NL	98.3	Weekly	Grab
pH (Standard Units)	6.0	N/A	9.0	Monthly	Grab
	C50≥50%	N/A	N/A	See Part IV	/ - B/C
Chronic Toxicity	NL	N/A	N/A	See Part I	7 - B/C

(1) To calculate the reported net values at outfall 001:

CF = Conversion Factor = 0.003785MASS INTAKE, kg/d = (Flow at Surface Intake, mgd) x (Conc. at Surface Intake, ug/l) x CF MASS at 001, kg/d (net) = MASS at 001, kg/d (gross) - MASS INTAKE, kg/d

MASS at 001, kg/d (net) = Net Reported 001 Concentration, ug/l Flow at 001, mgd x (CF)

(2) Monitor all pollutants listed in N.J.A.C. 7:14A-Appendix B Tables II & III except Pesticides.

Part III - B/C Page 3 of 3 pages Permit No. NJ0002089

2. SURFACE WATER QUALITY REQUIREMENTS

The permittee shall discharge so as not to violate Surface Water Quality Standards for the Kill Van Kull, classified as SE3 Waters, pursuant to N.J.A.C. 7:9-4.1 et seq.

3. TOXIC POLLUTANT REOPENER CLAUSE

Pursuant to N.J.A.C. 7:14A-3.13(a)3.iv., the Department may modify or revoke and reissue any permit to incorporate limitations or requirements to control the discharge of toxic pollutants, including whole effluent, chronic and acute toxicity requirements, chemical specific limitations or toxicity reduction requirements, as applicable.

4. ADDITIONAL EFFLUENT LIMITATIONS

The permittee shall discharge so as not to violate ISC Water Quality Regulations promulgated pursuant to the authority conferred upon the ISC by the Tri-State Compact (N.J.S.A. 32:18-1 et seq.).

The ISC Water Quality Regulations include, but are not limited to, the following provisions:

- a. Bio-chemical Oxygen Demand shall not exceed:
 - 30 mg/l on a 30 consecutive day average.
 - 45 mg/l on a 7 consecutive day average.
 - 50 mg/l on a 6 consecutive hour average.
- b. Total Suspended Solids content shall not exceed:
 - 30 mg/l on a 30 consecutive day average.
 - 2. 45 mg/l on a 7 consecutive day average.
 - 50 mg/l on a 6 consecutive hour average.
- c. When disinfection is required to protect the best intended uses of the waters in question, fecal coliform content shall not exceed:
 - 1. 200 per 100 ml on a 30 consecutive day geometric mean.
 - 400 per 100 ml on a 7 consecutive day geometric mean.
 - 800 per 100 ml on a 6 consecutive hour geometric mean.
 - 4. No sample may contain more than 2,400 per 100 ml.
 - d. Oil & Grease None noticeable in the effluent.
- * Effective July 1, 1986, these fecal coliform values must be met year-round.

Part IV - B/C
Page 1 of 1 6
Permit No. NJ0002089

1. ACUTE TOXICITY BIOMONITORING REQUIREMENTS

The permittee shall conduct definitive acute toxicity tests on its wastewater discharge DSN 001. Such testing will determine if appropriately selected effluent concentrations will affect the survival of the test species. Testing shall continue on the quarterly schedule already established under the existing permit.

- A. All toxicity tests shall be conducted in accordance with the following:
 - Acute toxicity test procedures shall conform to the "Regulations Governing Laboratory Certification and Standards of Performance" (N.J.A.C. 7:18). Subchapter 6 of the regulations contains the criteria and procedures for acute toxicity testing and analysis. The laboratory performing your acute toxicity testing will have to be within the laboratory certification program included within those regulations.
 - Test results shall be expressed in terms of the mortalities in each effluent concentration and, if they can be calculated, the median lethal concentration (LC50) with confidence interval.
 - All samples taken for the purpose of monitoring shall be representative of the monitored DSN.
- B. Test Species and Test Duration
 - The test species and test duration shall be:
 Mysid Shrimp (Mysidopsis bahia), 96 hr.
 - The Department may require additional testing with a second species, or designate the use of alternate test species.
- C. Monitoring Frequency
 - 1. The initial monitoring frequency shall be:

one test every three months

- 2. If a test has been evaluated and found to be invalid or otherwise unacceptable to the Department, the permittee shall begin an additional definitive acute toxicity test no later than 30 days after notification by the Department that the test is unacceptable/ invalid.
- If any two valid/acceptable acute toxicity tests, conducted within any eighteen month period, violate

Part IV - B/C Page 2 of 10 Permit No. NJ0002089

the acute toxicity limitation specified in Part III - B/C of this permit, the permittee shall conduct a Toxicity Reduction Evaluation (TRE) in accordance with Part IV - B/C of this permit.

- D. Unless already submitted, the following information shall be submitted to the address in paragraph E.1. within two months from EDP:
 - A fully completed "Methodology Questionnaire for Acute Toxicity Tests" form, which includes an identification of the certified acute toxicity testing laboratory responsible for the testing. Copies of this form are provided to certified laboratories.
 - A schematic diagram which depicts the location that the effluent samples will be taken; the diagram shall indicate the location of effluent sampling in relation to any wastewater treatment facilities and all Discharge Serial Numbers (DSN's).
 - A photocopy of a county map or USGS quad with the location of the dilution water sampling site relative to the effluent discharge point marked (unless the use of a reconstituted water has been approved).
- E. Acute toxicity test results shall be reported on the "NJPDES Biomonitoring Report Form - Acute Bioassays," copies of which are provided to certified laboratories.
 - TWO COPIES of each completed report form shall be submitted within 60 days of test completion to:

Bureau of Industrial Discharge Permits Division of Water Resources CN-029 Trenton, New Jersey 08625 Attention: Industrial Biomonitoring Program

 The test results shall also be reported on the permittee's Discharge Monitoring Report (DMR) for the monitoring period during which the test was conducted.

Part IV - B/C
Page 3 of 10
Permit No. NJ0002089

2. CHRONIC TOXICITY CHARACTERIZATION STUDY

The permittee shall conduct a chronic toxicity characterization study. This study shall consist of concurrent chronic toxicity testing with two species, conducted on the wastewater discharge DSN 001. Such testing will provide baseline data regarding the chronic effects of appropriately selected effluent concentrations on the survival, growth and/or reproduction of the test species and determine which test species is the most sensitive to the discharge.

The first chronic toxicity tests shall be initiated no later than three months from the Effective Date of the Permit (EDP).

- A. All testing shall be conducted in accordance with the following procedures.
 - Testing shall be in conformance with the guidelines contained in the "Interim Chronic Toxicity Testing Methodologies for Use in the NJPDES Permit Program, Version 1.0, February 1989" (Part V of this permit).
 - The laboratory performing the toxicity testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18-6.
 - Test results shall be expressed as both the NOEC (No Observable Effect Concentration) and the LOEC (Lowest Observable Effect Concentration) for each test endpoint.
 - All samples taken for the purpose of monitoring shall be representative of the monitored DSN.
- B. Test Species and Test Duration
 - Chronic Toxicity tests shall be conducted concurrently, with split samples, using the following test species and test durations:
 - a. A choice of one of te following two fish species:

 Sheepshead minnow (Cyprinodon variegatus), 7 day test

Inland Silverside (Menidia beryllina), 7 day test

and

b. Mysid shrimp (Mysidopsis bahia), 7 day test

Part IV - B/C Page 4 of 10 Permit No. NJ0002089

 The permittee has the option of concurrently testing with a third species from among those included within the methods specified in paragraph A.1. above. The selection of the third species must be approved by the Department prior to commencing this study.

C. Monitoring Frequency

- The first tests shall be conducted no later than EDP + 3 months. Subsequent tests shall be conducted at 2 - 3 month intervals.
- 2. The chronic toxicity characterization study shall not be complete until four concurrent tests, using split samples on the two species, which are acceptable to the Department have been completed. This characterization study must be completed by EDP + 12 months.
- If a test has been evaluated and found to be unacceptable to the Department, the two concurrent split sample tests shall be repeated within 30 days.
- D. The following information shall be submitted to the address in paragraph E.1. below within two months from EDP.
 - An identification of the certified laboratory responsible for conducting the chronic toxicity tests.
 - A completed chronic methodology summary questionnaire.
 Copies of this form will be provided to the certified laboratories.
 - A schematic diagram of the facility with the sampling point and all other discharges clearly marked.
- E. Test results shall be reported on forms provided to the certified laboratories by the Department.
 - Two copies of all test reports shall be submitted to:

Bureau of Industrial Discharge Permits Division of Water Resources CN-029 Trenton, New Jersey 08625 Attention: Industrial Biomonitoring Program

 The test results shall also be reported on the permittee's Discharge Monitoring Report (DMR) for the monitoring period during which the test was conducted.

Part IV - B/C
Page 5 of 10
Permit No. NJ0002089

3. TOXICITY REDUCTION EVALUATION

- A. The permittee shall conduct a Toxicity Reduction Evaluation (TRE) if any two valid/acceptable acute toxicity tests, conducted within any eighteen month period, violate the acute toxicity limitation.
- B. The TRE will determine how the permittee can consistently achieve compliance with the applicable acute toxicity limitation. The TRE shall be conducted as follows:
 - The permittee shall submit to NJDEP, within 90 days
 of the occurrence specified in paragraph A. above, a
 plan of study for conducting the TRE. The TRE plan
 shall include appropriate measures to characterize
 effluent variability, to identify the causative
 toxicants and/or evaluate toxicity treatability, and
 a schedule for completing the study.
 - The permittee shall conduct the TRE consistent with the submitted plan and schedule. Progress reports shall be submitted to NJDEP beginning 90 days from the date of the TRE plan submission and every 90 days thereafter until the study completion.
 - 3. Within 90 days of study completion, the permittee shall submit to NJDEP the final study results and a schedule for completing the implementation of those measures identified in the study as necessary to attain compliance with the applicable toxicity limitations.
 - 4. The permittee shall implement those measures identified in the study as necessary to attain compliance with the toxicity limitation consistent with the submitted schedule. If, for any reason, the implemented measures do not result in compliance with the toxicity limitation, the permittee shall continue the TRE. The TRE shall not be complete until the permittee has attained compliance with applicable toxicity limitations in this permit. The permittee must be in consistent compliance with all applicable toxicity limitations by June 4, 1992.
- C. NJDEP may reopen and modify this permit to include a new compliance date, a new or different compliance schedule, a change in the biomonitoring requirements, or any other conditions related to the TRE and complying with the effluent toxicity limitations, except for the final compliance date of June 4, 1992.

Part IV - B/C
Page 6 of 10
Permit No. NJ0002089

D. Two copies of all written submissions required above shall be sent to:

Bureau of Industrial Discharge Permits Division of Water Resources CN-029 Trenton, New Jersey 08625 Attention: Industrial Biomonitoring Program

Part IV - B/C
Page 7 of 10
Permit No. NJ0002089

4. ADDITIONAL REQUIREMENTS OF THIS PERMIT

A. Operation of Treatment Works

The operation of the treatment works shall be under the supervision of a licensed operator. The operator shall meet the requirements of the Department of Environmental Protection of the State of New Jersey for N2 or equivalent, pursuant to provisions of N.J.S.A. 58:11-64 and amendments thereto.

- B. If subsequent to the issuance of this permit the permittee proposes to install or modify a treatment works, the permittee shall submit to the NJDEP, for approval of the treatment works and determination of the operator's appropriate license classification, a complete application for Treatment Works Approval pertaining to the proposed treatment works installation/modification pursuant to N.J.A.C. 7:14A-12.1 et seq. A Treatment Works Approval is required to be obtained from NJDEP prior to beginning construction. The permittee shall obtain, the services of a licensed operator of the appropriate classification in accordance with the "Rules Governing the Examination and Licensing of Operators", N.J.A.C. 7:10-13.1 et seq., which became effective July 2, 1984, for any treatment works installed.
- C. In addition to the discharge monitoring report submitted to NJDEP in accordance with paragraph 11.I.(1) in Part I of this permit, the permittee shall also submit a duplicate signed copy of these, and all other reports required herein, to the following address(es):

Regional Administrator
Region II
U.S. Environmental Protection Agency
26 Federal Plaza
New York, N.Y. 10278
ATTN: Permits Administration Branch

D. The permittee shall satisfy the requirements as set forth in the provisions covering the generation, storage, handling, and disposal of sludges and/or hazardous solid wastes in accordance with N.J.A.C. 7:26-1 et seq.

Part IV - B/C
Page 8 of 10 pages
Permit No. NJ0002089

5. BEST MANAGEMENT PRACTICES (BMP) REQUIREMENTS

In order to prevent, or minimize the potential for the release of toxic substances from ancillary activities to the waters of the United States through plant runoff, spillage or leaks, sludge or water disposal or drainage from raw material storage, the permittee shall develop and implement a Best Management Practices (BMP) Plan.

These conditions apply to all permittees who use, manufacture, store, handle or discharge any pollutant listed as toxic under Section 307 (a)(1) of the Clean Water Act and who have ancillary manufacturing operations which could result in significant amounts of these pollutants reaching waters of the United States. These operations include material handling areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

The BMP Plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document," dated June 1981, and prepared by the U.S. Environmental Protection Agency, Office of Water Enforcement and Permits, NPDES Technical Support Branch. As a minimum, the plant shall include the following BMP's:

- a. BMP Committee
- b. Reporting of BMP Incidents
- c. Risk Identification and Assessments
- d. Employee Training
- e. Inspections and Records
- f. Preventive Maintenance
- g. Good Housekeeping
- h. Materials Compatibility
- 1. Security

The facility shall incorporate in the BMP Plan any appropriate procedures for adequately controlling spills and leaks of hazardous substances as specified in the DPCC Plan or other preventive plans submitted to the NJDEP. If, in the judgment of the BMP Committee, the present practices identified in these plans are adequate, they may be incorporated into the BMP Plan by reference.

Special Conditions of the BMP Plan

- The permittee shall determine the origin of the toxic pollutants detected in their discharges and subsequently develop an appropriate means to eliminate or treat these organics.
- 2. The BMP Plan should specifically include the management practices now used to monitor, pump and treat contaminated groundwater at the Bayonne site. If, in the judgement of the BMP Committee, the present practices are adequate, these may be incorporated into the BMP plan by reference.

Part IV - B/C Page 9 of 10 pages Permit No. NJ0002089

- 3. The Plan presently segregates hazardous and nonhazardous solid waste at the site. These segregration procedures should be incorporated into the BMP Plan. Particular attention should be given to the possible contamination of stormwater runoff from this area.
- 4. The Plan should also specifically address the large number of loading and off-loading (truck, rail car, barge) facilities at the site. Evaluation of these areas should consider both the routine possibility of leaks, drips and minor spills normally associated with such operations, as well as the more remote possibility of a sudden large spill which could result from an accident involving a tank truck at the loading point, or while traveling across the plant property; rail car accidents or derailments, etc.

Part IV - B/C
Page 10 of 10 Pages
Permit No. NJ0002089

- 6. COMPLIANCE SCHEDULE
- a) The Best Management Practices (BMP) Plan shall be submitted for review by EDP + 6 months.
- b) The permittee shall submit a progress report by EDP + 9 months regarding BMP Plan implementation.
- c) The permittee shall implement the BMP Plan by EDP + 12 months.
- d) All BMP and progress reports shall be submitted to this Department at the following address:

N.J.D.E.P.
Division of Water Resources
Bureau of Industrial Discharge Permits
Surface Water Section
CN-029
Trenton, New Jersey 08625

- e) The permittee shall submit a progress report by 7/31/90 updating the facility's ability to meet the permit effluent limitations.
- f) The permittee shall comply with the effluent limitations listed on Table 1B "Effluent Limitations and Monitoring Requirements" by 1/1/91. Monitoring and reporting is required during the interim in accordance with Table 1A.

Part IV - 304(L)
Page 1 of 3
Permit No. NJ0002089

1. Reopener Clause

The Department may reopen and modify, or revoke and reissue this permit to include any additional effluent limitations, permit conditions, compliance schedules or other control strategies, including waste load allocations, which the Department determines will produce a reduction in the discharge of toxic pollutants or whole effluent toxicity in the receiving water bodies identified pursuant to Section 304(1)(1)(A) of the Federal Clean Water Act as amended. This Section requires that individual control strategies be developed for these impacted segments. Section 304(1)(1)(D) established a statutory deadline June 4, 1992 by which the point sources identified must comply with the standards and/or control strategies developed.

This permit will be reopened to establish final water quality based effluent limitations after the submission of monitoring data for toxic pollutants, including whole effluent toxicity. These final limitations will be established as a final permit action on or before June 30, 1991. Final compliance with these limitations is required on or before June 4, 1992.

2. Required Studies

A. The studies specified herein, which may include effluent characterizations, dilution studies, and chronic toxicity characterization studies, are required to enable the Department to determine the individual control strategy necessary for the water body segment into which the permittee discharges. Upon completing its review of the results of the studies conducted, the Department will make a determination regarding the need for additional and/or modified permit conditions and will incorporate and require compliance with these conditions by the statutory compliance deadline.

- B. The following studies shall be conducted by the permittee:
 - Effluent Characterization as described in Paragraph
 A of this Part.
 - Dilution Study as described in Paragraph 3.B of this Part.
 - Chronic Toxicity Characterization Study as described in Section 2 of Part IV-B/C.
- C. The permittee shall submit quarterly progress reports to the Department. The reports shall be brief statements on the status of the work conducted during the reporting period. Progress reports are due on the first of the month, with the first report submitted by EDP + 3 months. Progress reports shall be submitted to:

NJDEP - Division of Water Resources Bureau of Industrial Discharge Permits CN-029 Trenton, NJ 08625

- D. In order to facilitate the Department's development of water quality based effluent limitations on or before June 30, 1991 in accordance with Paragraph 1 of this Part, the quarterly progress report which is due on or about December 1, 1990 shall also include a preliminary summary of all data that was collected through October 31, 1990. This preliminary data submission is necessary to enable the Department to make timely modification/reissuance of permits and to provide permittees with the maximum time for meeting compliance deadlines.
- E. All monitoring and study results, including whole effluent toxicity, required pursuant to Paragraph 2.B. of this Part shall be submitted by April 30, 1991.

3. MONITORING FOR WASTE LOAD ALLOCATION DETERMINATION

A. Effluent Characterization

In order for the Department to develop waste load allocations, monitoring requirements shall be implemented and last from EDP until EDP + one year. Each surface water outfall, as well as the influent stream to any treatment works, shall be monitored in accordance with the following:

PARAMETER	FREQUENCY	SAMPLE TYPE
Cadmium	Weekly	24-hour composite
Lead	Weekly	24-hour composite
Mercury	Weekly	24-hour composite
Arsenic	Weekly	24-hour composite
Copper	Weekly	24-hour composite
Nickel	Weekly	24-hour composite
Silver	Weekly	24-hour composite
Zinc	Weekly	24-hour composite
Priority Pollutant Scan		
Metals	Monthly	24-hour composite
Base Neutrals/	Monthly	24-hour composite
Acid Extractable	S	The state of the s
Volatiles	Monthly	Grab
Pesticides	Monthly	24-hour composite

For outfalls that consist SOLELY of discharges of non-contact cooling water (containing no additives such as corrosion inhibitors or biocides) or uncontaminated stormwater the monitoring frequency for the above individually listed parameters shall be monthly. The monitoring frequency for the priority pollutant scan shall be quarterly. For all outfalls the initial priority pollutant scan shall be performed by EDP + one month. All monitoring results shall be tabulated by outfall and a final report submitted by April 30, 1991.

B. Dilution Study

A dilution study must be performed for each outfall that does not consist SOLELY of non-contact cooling water or uncontaminated stormwater. Permittees that have previously submitted dye studies as a result of the prior directives of the Department need not repeat this task. For those permittees that must do dilution studies a plan of study must be submitted by EDP + one month. All work must be completed and a final report must be submitted by April 30, 1991. The dilution study will consist of plume mapping using a conservative dye and computer modeling if appropriate. Additional information concerning conduct of the dilution study is attached. The plan of study shall at a minimum address the areas covered in the attachments. Additional information concerning conduct of the dilution study is attached in Appendix A.

MIXING ZONE IMPLEMENTATION POLICIES FOR THE DISCHARGE OF TOXIC SUBSTANCES INTO TIDALLY INFLUENCED WATERS

The following mixing zone implementation policies are to be applied during critical conditions. Critical conditions are those that produce minimal dilution and/or have maximum environmental impact on aquatic life and the designated uses of the receiving waterbody.

Submerged Discharges

For submerged outfalls using a high-rate diffuser (exit velocity greater than 10 feet per second) chronic criteria will be applied at the edge of the mixing zone. The edge of the mixing zone being defined as the point where the effluent plume is indistinguishable from background conditions measured with a conservative dye. Acute criteria will be applied at the edge of the zone of initial dilution (ZID). The ZID is the region of initial mixing surrounding or adjacent to the end of the outfall diffuser. Initial dilution is the flux-averaged dilution (averaged over the cross-sectional area of the plume) achieved during the period when dilution is primarily a result of plume entrainment (i.e. mixing is due to the initial momentum and buoyancy of the plume).

For submerged outfalls that do not have a high-rate diffuser chronic criteria will be applied at the ZID and acute criteria will be applied at the end-of-pipe.

Use of the ZID and edge of mixing zone as physical mixing zone dimensions must conform to the following mixing zone policies as stated in N.J.A.C. 7:9-4.5(c)4:

- iii. The total area and volume of a waterway or waterbody assigned to mixing zones shall be limited to that which will not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem or which diminishes other beneficial uses disproportionately. Furthermore, significant acute mortality of aquatic biota shall not occur within the mixing zone.
- iv. Zones of passage shall be provided for the passage of free-swimming and drifting organisms wherever mixing zones are allowed.

Physical mixing zones that occupy less than 1/4 the cross-sectional area of a waterbody up to a maximum of 100 meters in any direction from the discharge outlet structure are assumed to be in compliance with the above narrative.

Surface Discharges

For discharges that are not submerged, both chronic and acute criteria will be applied at the end-of-pipe unless site specific conditions warrant otherwise.

PROCEDURES AND REQUIREMENTS FOR CONDUCTING DILUTION STUDIES

To conduct effluent dilution studies for mixing zone considerations and determination of critical Instream Waste Concentrations (IWC) requires the release and sampling of a conservative tracer dye during critical conditions and use of a computer model to simulate the movement of the effluent plume under various conditions.

Critical Conditions

Critical conditions are those that produce minimal dilution and/or cause the maximum environmental impact on aquatic life and the designated uses of the receiving waterbody. One of the primary concerns in defining critical conditions is stratification of the receiving waterbody. For the purposes of this document stratification refers to salinity and/or thermal variations which occur over a vertical profile in the receiving waterbody.

For non-stratified waterbodies minimal dilution occurs when fresh water inflows are at a minimum and a low water slack period during a spring tide occurs. These conditions should occur between September 1 and October 15. Also, to determine the maximum areal extent of the plume, maximum velocity during a tidal cycle should be examined.

For stratified waterbodies minimal dilution may occur at either minimal fresh water flows or at times of maximum stratification. In addition to the above non-stratified conditions the following should also be examined. For estuaries and tidal portions of streams that are likely to be salinity stratified maximum stratification would occur during periods of high fresh water inflows at low water slack during a neap tide. This should occur between March 1 and April 15. For coastal waters that are likely to be thermally stratified maximum stratification should occur between May 1 and August 1.

Dye Studies

The release and sampling of a conservative tracer dye is used to determine the mixing characteristics and movement of an effluent plume in a receiving waterbody. The results of a dye study are also used to calibrate and verify computer simulation models that can be used to describe the behavior of the effluent plume for conditions not sampled using dye. In order to conduct the study a conservative dye must be continuously introduced into the effluent maintaining a constant concentration in the effluent. The effluent discharge rate should be kept at as constant a rate as possible at a level that reflects the average discharge rate. Dye concentrations in the receiving waterbody should be sampled and analyzed in sufficient number, horizontal and vertical extent, and time duration to delineate the ZID and the edge of the mixing zone. The recommended dye is Rhodamine WT. Use of another dye requires that the following information be submitted 21 days prior

Part IV - 304(L) APPENDIX A Page 3 of 4

to the planned release of dye:

1. Name of dye.

2. Physical characteristics of the dye.

3. Available toxicity information on the dye.

4. Concentration at which dye is visible.

Planned concentration and total mass of dye to be discharged in the effluent.

Before any dye is released the appropriate Bureau of Regional Enforcement shall be notified at least 48 hours prior to release of dye.

Metro Bureau - (201) 669-3900 Bergen, Essex, Hudson, Union Counties

Central Bureau - (609) 426-0786

Burlington, Mercer, Middlesex, Monmouth,

Ocean Counties

Northern Bureau - (201) 299-7592 Hunterdon, Morris, Passaic, Somerset, Sussex, Warren Counties

Southern Bureau - (609) 346-8032
Atlantic, Camden, Cape May, Cumberland,
Gloucester, Salem Counties

Computer Models

There exists several models developed for USEPA that simulate effluent plumes from submerged or suface discharges. The following are the minimum data requirements to use the models:

Ambient current speed and direction
Outfall charateristics
Number of ports
Port effective diameter
Port spacing
Port orientation
Discharge depth
Effluent flowrate
Density (or salinity and temperature) of effluent
Density (or salinity and temperature) gradient
in receiving waterbody

For submerged outfalls the following USEPA models are available:

PLUME, OUTPLM, DKHDEN, MERGE, LINE

For surface discharges the following USEPA models are available:

PDS, PDSM, MOBEN, PSY

Part IV - 304(L) APPENDIX A Page 4 of 4

The following EPA documents can be obtained from: Martional Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, (703)487-4650.

TITLE	EPA NUMBER	NTIS REFERENCE NUMBER
Technical Guidance Manual for Performing Waste- load Allocations - Book II Streams and Rivers - Chapter 1 Biochemical Oxygen Demand/Dissolved Oxygen	EPA 440/4-84-020	P886178936
Technical Guidance Manual for Performing Waste- load Allocations - Book II Streams and Rivers - Chapter 2 Nutrient/Eutrophication Impacts	EPA 440/4-84-021	P886178944
Technical Guidance Manual for Performing Waste- load Allocations - Book II Streams and Rivers - Chapter 3 Toxic Substances	EPA 440/4-84-022	PB86170628
Technical Guidance Manual for Performing Waste- load Allocations - Book IV Lakes and Impoundments - Chapter 2 Mutrient/Eutrophication Impacts	EPA 440/4-84-019	PB86178928
Technical Guidance Manual for Performing Waste- load Allocations - Book VII Permit Averaging	EPA 440/4-84-023	PB86178951
Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water - Part I and Part II (Revised 1985)	EPA 600/6-85/002b	PB86122496 PB86122504
Technical Support Document for Water Duality- Based Toxics Control	EPA 440/4-85-032	P886150067
Initial Mixing Characteristics of Municipal Ocean Discharges		
Volume 1 - analytical solutions and descriptions of the five models: PLUME, CUTPLM, . LINE, MERGE, and DKKDEN	EPA 600/3-85-073a	PB86137478
Volume 2 - FORTRAN IV program tistings of the 5 models	EPA 600/3-85-0736	PB86137460
IBM-PC compatible diskettes containing the 5 models		P886137486
Mandbook - Stream Sampling for Waste Load Allocation Applications	EPA 625/6-86-013	
Revised Section 301(h) Technical Support Document	EPA 430/9-82-011	7. S.

PERMIT CONDITIONS RELATING TO RESIDUALS MANAGEMENT

The following shall supercede the residuals management conditions found in Part I, Section 18.E, of this NJPDES Permit.

- A. Collected grit and screenings, scums, sand bed sands, slurries, and sludges, and all other solids from the treatment process shall be managed in such a manner as to prevent such materials from entering the ground and/or surface waters of the State except in accordance with a NJPDES permit. If for any reason such materials are placed in the water or on the lands where they may cause pollutants to enter the ground and/or surface waters of the State, the following information shall be reported to the Division of Water Resources, Enforcement Element and to the Bureau of Pretreatment and Residuals of the Wastewater Facilities Management Element:
- (1) Dates of occurrence;
- (2) A description of the noncomplying discharge (nature and volume);
- (3) Cause of noncompliance;
- (4) Steps taken to reduce and eliminate the noncomplying discharge; and
- (5) Steps taken to prevent recurrence of the condition of noncompliance.
- B. If the chosen sludge management method is land application, the permittee must make provisions for storage, or some other approved management strategy, for those periods when land application is prohibited, including but not limited to winter months, or when the ground is frozen or saturated with water. The permittee shall not be permitted to store sludge on-site beyond the capacity of the structural treatment and storage components of the treatment facility, except in accordance with a NJPDES Emergency On-site Storage Permit. Nor shall the permittee be permitted to store sludge on-site in any manner which is not in accordance with Solid Waste Management Rules, N.J.A.C. 7:26-1 et seq. Any violations must be reported to the Division of Water Resources, Enforcement Element within 24 hours.
- C. The permittee shall comply with the Sludge Quality Assurance Regulations, N.J.A.C. 7:14-4.1 et seq. Where quality information is required by these regulations, analyses must reflect the quality of the final sludge product which the permittee must remove.

- D. The Permittee shall manage the sludge from this facility in compliance with the New Jersey Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the New Jersey Water Quality Planning Act N.J.S.A. 58:11A-1 et seq., which require conformance with District Sludge Management Plans, and Water Quality Management Plans. The permittee shall also comply with all applicable rules and regulations promulgated pursuant to the federal Resource Conservation and Recovery Act governing the treatment, storage and disposal of hazardous waste.
 - E. The permittee shall at all times have on file with the Department, proof of proper residuals management at a facility/ operation duly licensed and permitted by the appropriate entity(ies). To satisfy this requirement the permittee shall submit proof of ownership or contractual arrangement with a permitted facility/ operation for the composting, land application, thermal reduction, or other approved method of ultimate residuals management.

Where such permitted residuals management does not extend for the full term of this permit, the permittee shall submit similar proof of new permitted management arrangements which shall become effective no later than the expiration date of previous arrangements. All such proofs of ultimate management must be submitted in duplicate to:

Chief
Bureau of Pretreatment and Residuals
Wastewater Facilities Management Element
CN-029
Trenton, New Jersey 08625

The Permittee shall assure that sludge produced by this facility is at all times suitable for management at the site identified on such submitted proof of proper management.

F. The permittee shall comply with the provisions concerning the management of sludge in the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Solid Waste Management Act (N.J.S.A. 13:1E et seq.) and all regulations which address sludge management promulgated under these acts.

INTERIM CHRONIC TOXICITY TESTING METHODOLOGIES FOR USE IN THE NJPDES PERMIT PROGRAM

Version 1.0

February 1989

TABLE OF CONTENTS

Authority and Purpose	1
General Conditions	2
Safety	2
Test Concentrations	2
Dilution Water	2
Effluent Sample Collection	4
Physical Chemical Measurements	5
. Statistics	5
Standard Reference Toxicant Testing	6
Methods Specifications	7
Fathead Minnow (<u>Pimephales promelas</u>) Larval Survival and Growth Test	8
Ceriodaphnia dubia Survival and Reproduction Test	10
Algal (Selenastrum capricornutum) Growth Test	12
Sheepshead Minnow (Cyprinodon variegatus) Larval Survival and Growth Test	14
Inland Silverside (Menidia beryllina) Larval Survival and Growth Test	16
Mysidopsis bahia Survival, Growth, and Fecundity Test	18
Champia parvula Sexual Reproduction Test	20
Teratogenicity Endpoints	22
Peferences	23

Notice: Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

AUTHORITY AND PURPOSE

These interim methods for the conduct of whole effluent chronic toxicity testing are established under the authority of the NJPDES permitting program (N.J.A.C. 7:14A-2.9) for discharges to the waters of the State. They are intended as interim measures until the formal establishment of a laboratory certification program to govern the conduct of whole effluent chronic toxicity testing is established under N.J.A.C. 7:18. As such these methods are intended to be used to determine compliance with discharge permits issued under the authority of the NJPDES permit Tests are to be conducted in accordance with the program. general conditions and test organism specific method specifications contained in this document. All other conditions and specifications can be found in the cited USEPA methodologies (USEPA 1988, 1989).

Until a subchapter on chronic toxicity testing within the "Regulations Governing Laboratory Certification and Standards of Performance" (N.J.A.C. 7:18) becomes effective, tests shall be conducted in conformance with the interim methodologies as designated herein. The laboratory performing the testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18-6, as required by N.J.A.C. 7:9-4.5(c)5.

Testing shall be in conformance with the subchapter on chronic toxicity testing within the "Regulations Governing Laboratory Certification and Standards of Performance" (N.J.A.C. 7:18) when such regulations become effective. The laboratory performing the toxicity testing shall be within the chronic toxicity testing laboratory certification program to be established under that subchapter when it becomes effective.

These interim methods are incorporated into discharge permits as enforceable permit conditions. Each discharge permit will specify in Part IV of the permit the test species specific methods from this document which will be required under the terms of the discharge permit. Therefore, each individual permittee affected by these permit conditions has the right to comment on the methods applicable to their specific discharge during the public comment period on each individual permit. Although the test species specific methods for each permit are determined on a case-by-case basis, the purpose of this methods document is to assure consistency among dischargers and to provide certified laboratories with information on the universe of tests to be utilized so that they can make the necessary preparations.

GENERAL CONDITIONS

LABORATORY SAFETY, GLASSWARE, ETC.

All safety procedures, glassware cleaning procedures, etc., shall be in conformance with "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 2nd edition", (USEPA 1989), "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms" (USEPA 1988), or "Regulations Governing Laboratory Certification and Standards of Performance" (N.J.A.C. 7:18).

TEST CONCENTRATIONS

All testing is to be performed at a minimum of five effluent concentrations plus a dilution water control. One effluent concentration shall be the chronic permit limitation unless the existing data for the discharge indicate that the NOEC is expected to be significantly less than the permit limit. An effort shall be made to bracket the anticipated NOEC/LOEC test result.

DILUTION WATER - MARINE AND ESTUARINE WATERS

A high quality natural water, such as the Manasquan River Inlet (collected at high tide), is strongly recommended as the dilution water source for chronic toxicity testing with marine and estuarine organisms. The use of the receiving water as the dilution water source is not required. Saline waters prepared with hypersaline brine and deionized water may also be used as the base dilution water. Hypersaline brines shall be prepared from a high quality natural seawater and shall not exceed a concentration of 100 ppt.

The standard test salinity shall be 25 ppt, except for Champia parvula, which shall be tested at 30 ppt. Since most effluents are freshwater based, in most cases it will be necessary to adjust the salinities of the test concentrations to the standard test salinity.

The use of artificial seawater, prepared using artificial sea salts, is permitted but not recommended, only for the sheepshead minnow test (USEPA 1988, Method 1004) and for the mysid shrimp test (USEPA 1988, Method 1007). The acceptable sea salts include FORTY FATHOMS and HW MARINEMIX, as per the EPA marine chronic methods document (USEPA 1988). Use of any other salt(s) will require the submission in advance of adequate documentation, including at a minimum adequate standard reference toxicant data to demonstrate the acceptability of the salt(s) for use in chronic toxicity testing. They must be approved by the Department prior to the use.

Unless artificial seawater is to be used as the dilution water, hypersaline brine, concentrated to no more than 100 ppt, shall be the primary means of adjusting the test concentrations' salinities. In any test concentration, if the standard test salinity cannot be attained using 100 ppt hypersaline brine, the following procedure shall be used. This procedure shall not apply for any chronic toxicity testing using Champia parvula as the test organism.

- Hypersaline brine, 100 ppt, shall be used to adjust the salinities of all test concentrations up to the standard test salinity, or the highest salinity attainable.
- 2. In those test concentrations where the standard test salinity cannot be attained using 100 ppt hypersaline brine, the salinity shall be brought up to the maximum attainable salinity using 100 ppt. hypersaline brine and shall then be adjusted above that salinity using artificial sea salts. Restrictions on the type of artificial sea salts as discussed above also apply.
- A control prepared with hypersaline brine shall be included. An additional control prepared with artificial sea salts is recommended if sea salts are utilized as per paragraph 2, above.

The type of a dilution water for a permittee may not be changed without the prior approval of the Department.

Special attention should be given to the presence of required micronutrients in waters to be used for crustaceans. Refer to the specific test methodologies for more details.

If any distilled or deionized water is used, it should be prepared with Millipore Super QR or equivalent.

DILUTION WATER - PRESH WATERS

A high quality natural water, such as Round Valley Reservoir (if access is allowed) or Lake Hopatcong, is strongly recommended as the dilution water source for chronic toxicity testing with freshwater organisms. It is not required to perform the toxicity testing with the receiving water as dilution water. Tests performed with a reconstituted water or up to 20% Diluted Mineral Water (DMW) as dilution water are acceptable. The hardness of the dilution water must be within 10% of the hardness of the receiving water or 50 mg/L as CaCO₃, whichever is greater. The source of a dilution water for a permittee may not be changed without the prior approval of the Department. Reconstituted water and DMW should be prepared with Millipore Super QR or equivalent.

Special attention should be given to the presence of required micronutrients in waters to be used for crustaceans. Refer to the specific test methodologies for more details.

EFFLUENT SAMPLE COLLECTION

Effluent samples shall be representative of the discharge being regulated. For each discharge serial number (DSN), the effluent sampling location shall be the same as that specified in the NJPDES permit for other sampling parameters unless an alternate sampling point is specified in the NJPDES discharge permit. For industrial dischargers with a combined process/sanitary waste stream, effluent sampling shall be after chlorination, unless otherwise designated in the permit.

For continuous discharges, effluent sampling shall consist of 24 hour composite samples consisting either of equal volumes taken once every hour or of a flow-proportionate composite sample, unless otherwise approved by the Department. Effluent holding times and test solution renewal shall be consistent with the test organism specific methods in USEPA 1988 and 1989. For all other types of discharges, effluent sampling shall be conducted according to specifications contained within the discharge permit, or otherwise specified by the Department.

Except for filtration through a 2 mm or larger screen or an adjustment to the standard test salinity, no other adjustments to the effluent sample shall be made without prior written approval by the Department.

PHYSICAL CHEMICAL MEASUREMENTS

At a minimum, the physical chemical measurements must be consistant with the referenced test methodology (USEPA 1988, 1989).

The photoperiods should be phased in and out over a period of thirty (30) minutes for each transition period.

BTATISTICS

Statistical analysis should follow the protocols in USEPA (1988, 1989) to evaluate adverse effects. Generally, a significance level of 0.05 will be utilized to evaluate such effects.

A dilution factor of 0.3 or 0.5 can be used. However, the Department recommends the use of the 0.5 dilution factor due to the increased test precision. Note that this may require more than five dilutions to cover the entire range of effluent concentrations.

If separate NOEC's can be calculated from multiple test endpoints, as for example a reproductive end-point and a growth endpoint, the most sensitive end-point will be used to determine permit compliance.

NOTE: Use of nonparametric statistical analyses requires a minimum of four (4) replicates per test concentration. If the data for any particular test is not conducive to parametric analyses and if less than four (4) replicates were included, the test may not be acceptable to the Department.

STANDARD REFERENCE TOXICANT TESTING

All chronic testing shall be accompanied by testing with a standard reference toxicant as a part of the each laboratory's internal quality control program. Such a testing program should be consistent with the quality assurance/quality control protocols described in the USEPA chronic testing manuals for freshwater organisms and for marine and estuarine organisms (USEPA 1989, 1989). Laboratories may utilize the standard reference toxicant of their choice.

At a minimum, this testing should include an initial series of at least five reference toxicant tests for each test species method. This testing should be completed prior to the initiation of any chronic effluent toxicity testing for each test species method. The laboratory should forward two copies of the initial testing, including control charts, the name of the standard reference toxicant utilized, the supplier, and appropriate chemical analysis of the toxicant, to the following address:

Municipal/Industrial Biomonitoring Programs Wastewater Facilities Management Element Division of Water Resources CN-029 Trenton, NJ 08625-029

Subsequent testing should include testing of each batch of organisms obtained from a supplier and/or monthly testing of organisms cultured by the laboratory. Control charts should be maintained by the laboratory. Two copies of the control charts are to be forwarded annually to the Biomonitoring Programs at the above address. Results of appropriate chemical analyses of each lot of standard reference toxicant utilized must be included.

If standard reference toxicant tests fall outside the expected range of the control chart at a frequency greater than one in any twenty tests, a report shall be forwarded to the Biomonitoring Programs at the address above. This report shall include the identified problem which caused the value to fall outside the expected range and the corrective actions that have been taken by the laboratory. The Department may not accept or may require repeat testing for any required toxicity testing that may be affected by such an occurance.

METHODS SPECIFICATIONS

SUMMARY OF TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) LARVAL SURVIVAL AND GROWTH TEST

1.	Test Type:	Static Renewal
2.	Test Duration:	7 days
3.	Renewal of Test Solution:	Daily
4.	Age of Test Organisms:	Newly hatched larvae (<24 hours old). Testing with organisms up to 48 hours is allowed if they are all within one age group
5.	Dilution Factor:	0.3 or 0.5
6,	Number of Test Concentrations:	minimum 5 plus a control (a second control is optional when a dilution water other than the culture water is used)
7.	Number of Replicates per Each Concentration & Control:	4 (minimum of 3)
8.	Number of Larvae per Replicate:	15 (minimum of 10)
9.	Test Chamber Size:	500 ml recommended (covered)
10.	Test Solution Volume:	minimum 250 ml/chamber
11.	Loading Factor:	20 ml/organism
12.	Test Dilution Water:	natural water (60 micron mesh filtered), reconstituted water or up to 20% diluted mineral water (DMW). Reconstituted and DMW waters should be prepared with Millipore Super-QR or equivalant water. Aerate a minimum of 24 hours.
13.	Test Temperature:	25 <u>+</u> 1° C
14.	Aeration:	none, unless the DO concentration falls below 40% saturation then all

replicates. Rate should be less than 100 bubbles/min.

15. Feeding Regime:

Feed 0.1 ml newly hatched brine shrimp naupli twice daily, 6 hr. between feedings (at the beginning of the work day at time of renewal and at the end of the work day). No feeding day 7. Sufficient naupli should be added to produce an excess.

16. Photoperiod:

16 hr. light, 8 hr. darkness. 30 min. phase in and phase out recommended.

17. Light Intensity:

Ambient laboratory levels (10-20 uE/m2/s or 50-100 ft-c)

18. Cleaning:

Siphon daily, immediately before test solution renewal

19. Effects Measured:

Survival and growth (dry weight)

20. Test Acceptability:

≥80% control survival, ave. dry weight of surviving controls ≥ 0.25 mg

21. Weighing/Drying Proceedures:

Immediately prepare for drying and weighing or preserve in 70% ethanol to dry and weigh at a later date. Dry at 100°C for a min. 2 hrs or until constant weight is achieved.

22. Other Test Specifications in:

1--

USEPA, 1989. Method 1000.0

SUMMARY OF TEST CONDITIONS FOR CERTODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1.	Test type:	Static renewal
2.	Test duration:	3 broods (see 19)
3.	Temperature (°C):	25 + 1°C
4.	Light quality:	Ambient laboratory illumination
5.	Light intensity:	10-20 uE/m ² /s, or 50-100 ft-c (ambient laboratory levels). Caution should be taken to avoid excessive photosynthetically mediated elevations in pH.
6.	Photoperiod:	16 h light, 8 h dark
7.	Test chamber size:	30 ml recommended (covered)
8.	Test solution volume:	15 ml recommended. Test chambers should contain sufficient test solution to provide adequate surface area to maintain dissolved oxygen concentrations at or above 40 percent saturation
9.	Loading factor:	Minimum 15 ml/animal
10.	Renewal of test solutions:	Daily
11.	Age of test organisms:	Less than 24 h; and all released within a 8-h period
12.	Number of neonates per replicates:	Maximum of 1
13.	Number of replicates per each concentration and control:	Minimum of 10
14.	Number of test concentrations:	Minimum of 5 effluent concentrations and a control. (A second control is optional when a dilution water other than the culture water is used.)

15. Feeding regime:

Diet must include an algal component. USEPA (1989) recommends feeding 0.1ml/15ml each of YTC (yeast, trout chow and Cerophyl) and Selenastrum capricornatum suspension per exposure chamber daily. Alternatives include algal diets of: 1. Ankistrodesmus convolutus and Nitzschia frustulum, and 2. A. convolutus, Chlamydomonas reinhardti and N. frustulum (Cowgill et al., 1985, 1988; Keating and Dagbusan, 1986). Algal feeding rates and other algal diets must be approved prior to use.

- 16. Aeration:
- 17. Dilution water:

- 18. Dilution factor:
- 19. Test duration:
- 20. End points:
- 21. Test acceptability:

22. Other test specifications in:

None.

Natural water (60um mesh filtered), reconstituted water, or up to 20% diluted mineral water (DMW).

Reconstituted and DMW waters should be prepared with Millipore Super Q or equivalent. Addition of 5 ug/l seleni (2 ug/l selenium with natural water) and 1 ug/l vitamin Bl2 is recommended (Keating and Dagbusan, 1984; Keating, 1985 1988). Aerated prior to the test for a minimum of 24 hours, but not supersaturated.

0.3 or 0.5

Until 60% of control females have thre broods, up to a maximum of eight days.

Survival and reproduction

80% or greater survival and an average of 15 or more young/surviving female i the controls. At least 60% of surviving females in the controls produced their third brood within eight days. No ephippa produced in the controls. The number of males in the controls and test concentrations should be minimal and not influence the determination of the NOEC and LOEC

USEPA, 1989. Method 1002.0

SUMMARY OF TEST CONDITIONS FOR ALGAL (SELENASTRUM CAPRICORNUTUM) GROWTH TEST

1.	Test Type:	Static, Non Renewal
2.	Test Duration:	96 hours
3.	Age of Test Organisms at Test Start:	4 to 7 days
4.	Dilution Factor:	0.3 or 0.5
5.	Number of Test Concentrations:	Minimum of 5 plus a control (A second control is optional when a dilution water other than the algal culture medium is used).
6.	Number of Replicates per Each Concentration and Control:	4 (Minimum of 3)
7.	Initial Cell Density per Replicate:	10,000 cells/ml
8.	Test Chamber Size:	125 ml or 250 ml chamber recommended (covered)
9.	Test Solution Volume:	50 ml or 100 ml recommended
10.	Dilution Water:	Algal culture medium or filtered natural surface waters using a 0.45 um pore diameter filter, followed by addition of nutrient solutions (USEPA 1989, Method 1003, Table 1). The use of EDTA or other nutrient solutions is not recommended.
11.	Reagent Water:	Carbon filtered distilled or deionized water which does not contain substances which are toxic to the test organism. A water purification system may be used to generate reagent water (ie. Millipore Super QR or equivalent).
12.	Test Temperature:	25°± 1° C
13.	Photoperiod:	Continuous illumination

14. Light Quality:

"Cool White" Fluorescent lighting

15. Light Intensity:

86+8.6 uE/m²/s (400+40ft-c)

16. Shaking Rate:

100 cpm continuous or twice daily by hand

17. Effects Measured:

Growth (cell counts, chlorophyll content, fluorescence, absorbance, biomass)

The algae in the test solutions must be checked under a microscope to detect abnormalities in cell size or shape.

Algal growth determined daily

Algal density $\geq 2 \times 10^5$ cells/ml in the controls (without EDTA). Variability of controls should not exceed 20 percent.

19. Other Test Specifications in:

18. Test Acceptability:

USEPA, 1989. Method 1003.

SUMMARY OF TEST CONDITIONS FOR SHEEPSHEAD MINNOW (CYPRINODON VARIEGATUS) LARVAL SURVIVAL AND GROWTH TEST

1. Test Type: Static Renewal

2. Test Duration: 7 days

Renewal of Test Solutions: Daily

4. Age of Test Organisms at Newly Hatched Larvae. (24 hrs Test Start: Testing with organisms old).

up to 48 hrs old is permitted if they are all within one age

group.

5. Dilution Factor: 0.3 or 0.5

Minimum of 5 plus a control (a second reference water control 6. Number of Test Concentrations:

is optional when a dilution water other than the culture water is used)

Minimum of 3 7. Number of Replicates per

Each Concentration and Control:

1-

Minimum of 10 Number of Organisms per

Replicate:

Minimum of 600 mL chamber 9. Test Chamber Size:

(covered)

10. Test Solution Volume: Minimum of 500 mL/replicate

Minimum 50 mL/larvae 11. Loading Factor:

Natural sea water or 12. Dilution Water:

hypersaline brine

13.	Salinity of Test Concentrations:	25 ppt +/- 2 ppt (varying not more than 2 ppt among replicate chambers each day)
14.	Adjustment of Salinity of Test Concentrations:	Hypersaline brine to 75% effluent. Acceptable artificial sea salts above 75% effluent.
15.	Test Temperature:	25 +/- 2°C
16.	Aeration:	None unless the Dissolved Oxygen falls below 60% saturation, then all chambers. Rate less than 100 bubbles/min
17.	Food Source:	24 hour post hatch <u>Artemia</u> nauplii. (Other supplements or variations approved prior to use.)
18.	Feeding Regime:	Days 0-2: feed once per day 0.1 g wet weight <u>Artemia</u> nauplii per replicate. Days 3-6: feed once per day 0.15 g wet weight <u>Artemia</u> nauplii per replicate.
19.	Photoperiod:	16 Light:8 Dark
20.	Effects Measured:	Survival and Growth
21.	Weighing/drying Procedures:	Immediately prepare for drying and weighing or preserve in formalin or ethanol to dry and weigh at later date.
22.	Test Acceptability:	80% survival in controls and an average dry weight of ≥ 0.60 mg (unpreserved larvae) or 0.50 mg (preserved larvae)
23.	Other test specifications available in:	USEPA 1988, Method 1004

SUMMARY OF TEST CONDITIONS FOR INLAND SILVERSIDE (MENIDIA BERYLLINA) LARVAL SURVIVAL AND GROWTH TEST

1.	Test Type:	Static Renewal
2.	Test Duration:	7 days
3.	Renewal of Test Solutions:	Daily
4.	Age of Test Organisms at Test Start:	7-11 days post hatch Larvae
5.	Dilution Factor:	0.3 or 0.5
6.	Number of Test Concentrations:	Minimum of 5 plus a control (a second reference water control is optional when a dilution water other than the culture water is used)
7.	Number of Replicates per Each Concentration and Control:	Minimum of 3
8.	Number of Organisms per Replicate:	Minimum of 10
9.	Test Chamber Size:	Minimum of 600 mL chamber (covered)
10.	Test Solution Volume:	Minimum of 500 mL/replicate
11.	Loading Factor:	Minimum 50 mL/larvae
12.	Dilution Water:	Natural sea water or hypersaline brine
13.	Salinity of Test Concentrations:	<pre>25 ppt +/- 2 ppt (varying not more than 2 ppt among replicate chambers each day)</pre>

14. Adjustment of Salinity of Hypersaline brine to 75% Test Concentrations: effluent. Acceptable artificial sea salts above 75% effluent. 15. 25 +/- 2°C Test Temperature: 16. Aeration: None unless the Dissolved Oxygen falls below 60% saturation, then all chambers. Rate less than 100 bubbles/min 17. Food Source: 24 hour post hatch Artemia nauplii. (Other supplements or variations approved prior to use.) 18. Feeding Regime: Days 0-2: feed once per day 0.1 g wet weight Artemia nauplii per replicate. Days 3-6: feed once per day 0.15 g wet weight Artemia nauplii per replicate. 19. Photoperiod: 16 Light:8 Dark 20. Effects Measured: Survival and Growth 21. Weighing/drying Immediately prepare for drying Procedures: and weighing or preserve in formalin or ethanol to dry and weigh at later date. 22. Test Acceptability: 80% survival in controls and an average dry weight of 2 0.50 mg (unpreserved larvae) or 0.43 mg (preserved larvae)

23. Other test specifications USEPA 1988, Method 1006

available in:

SUMMARY OF TEST CONDITIONS FOR MYSID (MYSIDOPSIS BAHIA) SURVIVAL, GROWTH, AND FECUNDITY TEST

1.	Test Type:	Static Renewal
2.	Test duration:	7 days
3.	Renewal of Test Solutions:	Daily
4.	Age of Test Organisms at Test Start:	7 days; 8 days maximum (all released within 24 hours from a single source).
5.	Dilution Factor:	0.3 or 0.5
6.	Number of Test Concentrations:	Minimum of 5 plus a control (a second control is optional when a dilution water other than the culture water is used).
7.	Number of Replicates per Each Concentration and Control:	Minimum of 5 recommended
8.	Number of Organisms per Replicate:	Minimum of 10 recommended
9.	Test Chamber Size:	Minimum of 500 ml recommended (covered)
10.	Test Solution Volume:	Minimum of 400 ml recommended
11,	Dilution Water:	Natural Sea Water or Hypersaline Brine
12.	Salinity of Test Concentrations:	25 ppt ± 2 ppt (varying not more than 2 ppt among replicates each day)
13.	Adjustment of Salinity of Test Concentrations:	Hypersaline Brine to 75 percent effluent. Artificial sea salts acceptable above 75 percent effluent.
14.	Test Temperature:	260- 27°C recommended

15. Aeration:

None unless the Dissolved Oxygen falls below 60% saturation, then all chambers.

16. Food Source:

24 hour post hatch Artemia naupli (other supplements or variations should be approved prior to use).

17. Feeding Regime:

150 naupli per mysid
(approximately 0.1 ml of
concentrated naupli) - half
after test solution renewal and
half at 8 - 12 hours.

18. Photoperiod:

16 h light, 8 h dark

19. Light Intensity:

50-100 ft-c

20. Effects Measured:

Survival, Growth and Fecundity

21. Weighing/Drying Procedures:

Animals examined within 12 hours of test termination. Pieces of aluminum foil or small aluminum foil weighing boats less than 10 mg in weight.

22. Physical/Chemical Measurements (In addition of those specified in the General Conditions Section): Ammonia, Nitrite and Nitrate shall be measured in the controls at the test beginning.

23. Recommended Culture Water Specifications (Ward, 1989, 1989b): Salinity = 25 ppt
Temperature = 25 degrees
pH = 7.8 - 8.2 SU
Dissolved Oxygen = 6.5 - 7.1 mg/1
Ammonia = \(\preceq 0.05 \text{ mg/1}\)
Nitrite = \(\overline{\infty} 20.05 \text{ mg/1}\)
Nitrate = \(\overline{\infty} 20 \text{ mg/1}\)
Alkalinity = 45 - 120 mg/1

24. Test Acceptability:

≥80% control survival, an average weight of ≥0.2 mg per mysid in the controls and egg production by 50 percent of the control females.

25. Other Test
Specifications in:

USEPA, 1988. Method 1007.

SUMMARY OF TEST CONDITIONS FOR CHAMPIA PARVULA SEXUAL REPRODUCTION TEST

1.	Test type:	Static, non-renewal
2.	Test duration:	2-day exposure to effluent, followed by 5- to 7-day recovery period for females only in control medium for cystocarp development
3.	Test solution volume:	100 mL
4.	Dilution water:	30 ppt salinity natural seawater, or a combination of 50% - 30 ppt salinity natural seawater and 50% - 30 ppt salinity artificial seawater as per USEPA (1988), method 1009.
5.	Dilution factor:	0.3 or 0.5
6.	Number of test concentrations:	At least 5 and a control, the concentration of effluent used in this test is limited to a maximum of 50%.
7.	Number of replicates per each concentration and control:	4 (minimum of 3)
8.	Number of organisms per replicate:	5 female branch tips approximately 1cm in length and 1 male plant approximately 2cm in length (visibly producing spermatia).
9.	Salinity:	30 ppt <u>+</u> 2 ppt
10.	Temperature:	22 - 24°C
11.	Photoperiod:	16 h light, 8 h dark
12.	Light intensity:	100 uE/m ² /s (500 ft-c)
13.	Light source:	Cool-white fluorescent lights
14.	Test chamber:	200 mL polystyrene cups (covered), or 250 mL Erlenmeyer flasks (recommended)
15.	Aeration:	None during exposure period; chambers are either shaken at 100 rpm on a rotary shaker or handswirled twice a day.
16.	Effects measured:	Significant reduction in the number of cystocarps formed in test concentrations compared to controls.

17. Test acceptability:

80% survival in the controls (generally there is no control mortality), controls shall average 10 cystocarps or more per plant, plants in the control and lower test concentrations shall not fragment so that individual plants cannot be identified.

18. Other test specifications in:

USEPA, 1988. Method 1009.

TERATOGENICITY ENDPOINTS

If for any reason the Department has concerns regarding the teratogenicity of a particular effluent to aquatic life, in addition to the methods contained in the Methods Specifications section, the following methods may be used:

Fathead Minnow (<u>Pimephales promelas</u>) Embryo-larval Survival and Teratogenicity Definitive Test, Method 1001.0. (USEPA 1989).

Sheepshead Minnow (Cyprinodon variegatus) Embryo-larval Survival and Teratogenicity Definitive Test, Method 1005. (USEPA 1988).

REFERENCES

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- Keating, K. 1985. The influence of Vitamin B12 deficiency on the reproduction of <u>Daphnia pulex</u> Leydig (Cladocera). J. Crustacean Biology 5:130-136.
- Keating, K. 1988. N.J.D.E.P. Project C29589, Fiscal 1988 Third Quarter Summary Report. Producing Nutritionally Competant Daphnids for Use in Bioassay. 44p.
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- Keating, K., and B. Dagbusan. 1986. Diatoms in daphnid culture and bioassay. Envirn. Tox. Chem. 5:299-307.
- USEPA. 1988. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-87/028. May 1988. 417 p.
- USEPA. 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/600/4-89/001. February 1989.
- 9. Ward, S.H. 1989a. Requirements for a balanced medium in toxicological experiments using Mysidopsis bahia with special reference to calcium carbonate. Aquatic Toxicology and Hazard Assessment: 12th volume. ASTM STP 1027. U.M. Cowgill and L.R. Williams, Eds., American Society for Testing and Materials, Philadelphia, PA. (In press).
- Ward, S.H. 1989b. Techniques to enhance laboratory culture of <u>Mysidopsis bahia</u> (Molenack). 118th Annual Symposium of the American Fisheries Society. September 9-15, 1988, Toronto, Ontario. (In press).

CONTAMINATED WELLFIELD FEASIBILITY STUDIES

Program-92 Program Request - \$-0-

No additional program appropriations are requested as the current Legislative Assembly Bill No. 2911 proposes to appropriate \$6,500,000 to the 1981 Water Supply Feasibility Study Program. Of this appropriation, \$2,500,000 was requested for the purpose of funding Contaminated Wellfield Feasibility Studies.

The purpose of this program is to determine a cost effective method of supplying water to people adversely affected by groundwater pollution. These studies are beyond the technical and economic capabilities of the local communities, but must be prepared in order to delineate the public health risks and to satisfy funding requirements. This program will accomplish these tasks through private consultants awarded site specific projects through Term Contract X-555. This contract is currently in the process of being extended to cover the period ending June 30, 1991.

Based upon program history, wellfield feasibility studies occur on an emergency basis. Each year, approximately six cases are studied at an average cost of \$80,000 per case, resulting in projected annual needs of \$480,000. Upon expiration of Term Contract X-555 in June, 1991, a decision as to whether to further extend its term will be made. This decision, to be made in FY-91, is dependent upon the resolution of on-going discussions with regard to a new contract for Immediate Environmental Concerns (I.E.C.), which will be applicable to water supply studies and remediation of contaminated sites.

FY-93 Program Request - \$ -0-

Appropriated funds will be utilized for the continuation of the program as set forth in the FY-92 program description.

FY-94 Program Request - \$ -0-

Appropriated funds will be utilized for the continuation of the program as set forth in the FY-92 program description.

Take Some

ADDITIONAL GENERAL CONDITIONS FOR NUFFLEX/DSN PERMITS FROM INDUSTRIAL/COMMERCIAL AND/OR THERMAL DISCHURGES

 The following additional conditions applicable to specified categories of DSW permits in accordance with W.J.A.C. 7:14A-3.11, in addition to those set forth in W.J.A.C. 7:14A-2.5, 3.10 and 3.12, hereby apply to all DSW permits within the categories specified below:

Existing manufacturing, commercial, mining, and milvicultural dischargers and research facilities. In addition to the reporting requirements under Section 2.5(a)12 and Section 3.10 of N.J.A.C. 7:14A-1 et seq. all existing manufacturing, commercial, mining, and milvicultural dischargers and research facilities must notify the Department as soon as they know or have reason to believe:

- A. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels."
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 mg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 mg/l) for 2,4-dimitrophenol and for 2-methyl-4, 6-dimitrophenol; and one milligram per liter (1 mg/l) for antimomy;

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- (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with N.J.A.C. 7:16A-10.3(a)9. or 10.3(a)12; or
- (4) The level established by the Department in accordance with W.J.A.C. 7:14A-3.13(a)6.
- B. That they (except for research facilities) have begun or expect to begin to man or samufacture as an intermediate or final product or hyproduct any toric pollutant which was not reported in the permit application under N.J.A.C. 7:144-3.2 and 10.3(a)11.
- If the permittee is required by this permit to monitor for Oil and Grease and/or Petrolem Hydrocarbons, samples shall be collected and smalyzed in accordance with the Oil and Grease Effluent Limitations, M.J.A.C. 7:14A-14.1 et seq.;
- 3. Bubmission of Monitoring Reports

a water to

Monitoring results for each reporting period shall be summarized and reported on the appropriate Monitoring Report Forms and shall be submitted postmarked no later than the 25th day of the month following the completed reporting period.

1.A EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning EDP and lasting through December 31, 1990 the permittee is authorized to discharge from the outfall(s) serial number(s): DSN 001, Eastside Treatment Plant.

There shall be no discharge of floating solids or visible foam in other than trace amounts. There shall be no visible sheen.

The abbreviation 'N/A', in the table below denotes 'Not Applicable' while the abbreviation 'NL', denotes 'Not Limited' with both monitoring and reporting required.

Samples taken in compliance with the specified monitoring requirements shall be taken at the discharge from the effluent chamber identified as DSN 001; and shall be reported monthly.

EFFLUENT CHARACTERISTIC		DISCHARGE LIMIT	ATIONS	MONITORING	REQUIREMENTS
All units are in mg/l	Daily	Monthly	Daily	Frequency	Sample type
unless otherwise specified	Minimum	Average	Maximum		
Flow, Intake (MGD)	N/A	NL	NL	Continuous	
Plow, Effluent (MGD)	N/A	NL	3.024	Continuous	
Total Suspended Solids, net	N/A	NL	50	2/Month	Composite (1)
Total Organic Carbon (kg/d)	N/A	314.4	586.5	2/Month	Composite
Oil and Grease, net	N/A	10	15	Weekly	Grab
Chlorobenzene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)
Ethylbenzene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)
Toluene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)
Napthalene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)
1,2-Dichlorobenzene (ug/1), net	N/A	NL	NL	Monthly	Grab (1)
Priority Pollutant Scan (ug/1)	N/A	NL	NL	Quarterly	Grab (2)
Temperature (°F)	N/A	NL	98.3	Weekly	Grab
pH (Standard Units)	6.0	N/A	9.0	Monthly	Grab
Acute Toxicity LC	50≥50%	N/A	N/A	See Part IV	
Chronic Toxicity	NL	N/A	N/A	See Part IV	- B/C

(1) To calculate the reported net values at outfall 001:

CF = Conversion Factor = 0.003785

MASS INTAKE, $kg/d = (Flow at Surface Intake, mgd) \times (Conc. at Surface Intake, ug/1) \times CF MASS at 001, kg/d (net) = MASS at 001, kg/d (gross) - MASS INTAKE, kg/d$

MASS at 001, kg/d (net) = Net Reported 001 Concentration, ug/l Flow at 001, mgd x (CF)

(2) Monitor all pollutants listed in N.J.A.C. 7:14A-Appendix B Tables II & III except Pesticides.

ATTACHMENT I-II

APPLICATION FOR A NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE TO GROUNDWATER PERMIT (1989)



POST OFFICE BOX 9000 . BAYONNE, NEW JERSEY 07002-9000

MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE TERMINAL

August 11, 1989

New Jersey Department of Environmental Protection Division of Water Resources Bureau of Information Resources CN-029 Trenton, New Jersey 08625 Attention: Ted Hayes, Bureau of Ground Water Discharge Control

Re: Exxon Bayonne Plant, New Jersey 0002089

Dear Mr. Hayes:

As requested by the NJDEP in its letter of June 6, 1989, Exxon Company, USA hereby submits the attached completed forms (CP-1, WQM-001, WQM-2) in support of an application for a site NJPDES Discharge to Ground Water (DGW) Permit. Further, please note that Exxon is not in this submission applying for a permit for a specific project.

If you require any clarifications please contact me at (201) 858-7091.

Sincerely,

Carl J. Hess

Environmental Coordinator

CJH:slb

Attachment



State of Rem Jersey

FOR OFFICIAL USE

DEPARTMENT OF ENVIRONMENTAL PROTECTION

STANDARD APPLICATION FORM (CP #1) CONSTRUCTION PERMIT NUMBER 1

CONSTRUCTION AND DISCHARGE PERMITS

Permanent Legal Address 250 East 22nd St	treet				
	State N.J.	Zip Code 07002			
Federal Tax I.D. or S.S. # 13-5409005					
b. Applicant/Operator Exxon Company, USA	Teleph	none (201) 858-5555			
Permanent Legal Address 250 East 22nd S	treet				
	State_N.J.	Zip Code 07002			
c. Co-permittee* N/A		none ()			
Permanent Legal Address					
City or Town_	State	Zip Code			
Name of Facility, if applicable Bayonne Plant Address (Street/Road) 250 East 22nd Street	t				
Lot No. See Attachment 1 Block No.					
City or Town Bayonne		Zip Code_07002			
Municipality Bayonne	County_ Hidson				
If applicable, give name of: Engineer/Surveyor/Wel	Driller/Geologist/Soil Scien	tist (Specify)			
Name Anthony J. Scacifero, P.G.	Del.	Del License No. 372			
Name of Firm, if employee EA Engineering Science and Technology, Inc.					
Address (Street/Road) 654 Springfield Avenue					
	State N.J.	Zip Code 07922			
City or Town Berkeley Heights					
Municipality Berkeley Heights	County Union				

Sewer System Applications (Treatment Works Approvals) should be made on behalf of the eventual owner of the proposed system.

^{*} This section must be completed by any local governmental unit when it is a Co-permittee. (Not required for Treatment Works Approvals.)

. Fe	e is attached ((if applicable).	\$	-				
i. Es	timated const	truction cost o	project:		4			
		=		total cost of t	the project			
	D.	•		portion for wh	nich this pen	mit is request	ed	
. Ih	ave included	certifications o	any public n	otifications.	Yes	No		
	applicable:		La.				esterna.	
(17							completed.)	,
							Kull wate	
	C.	Stream, Wat	erway, Pond	or Lake				
	a.	Wastewater	Treatment Fa	cataly		_		
	project? (# y	es, indicate st	atus and proje	ect number be Decision	elow.)		tate permits been	
	Identify any s	state Green Ac	res or federal	Land and W	later Conser	vation Fund p	projects separatel	
	i.						APPLICATION STATUS	
					-4		(Pending -	
	PERMIT TY	PE (Use ac	ditional shee	ts if necessar	(7)		Approved)	PROJECT
9.1	CAFRA		er Orkans also influence	on order are thought on the				*
9.2								
			A 25 - 4 - 25 - 100 - 100					
9.3								
9.4	Share a sala	ALTONOM A TO						
9.5								
9.6	Stream En	croachment		*************	************			
9.7	Water Qual	ity Certificate	(Section 40)1)				
9.8	Open Wate	r FIII						
9.9	Tidelands (F	Riperian) Gra	nt, Lease or	License				
9.10	Dam Const	truction/Repa	ir					
9.11	Purchase Diversion	Water	••••••					-
9.12	Divert Wate	or Supply for	Public Use.	***************************************	.,			<u> </u>
9.13	Divert Surfa	ace Waters f	or Private U	so				
9.14	Divert Subs	urtace/Perco	ating Water	for Private I	Usa	********		
9.15	Well Drillin	·g						
		Water-Lowe						

	PERMIT TYPE (Use additional sheets if necessary)	APPLICATION STATUS (Pending - Approved)	PROJECT #
9.17	Temporary Water Lowering		
9.18	Construct/Modify, Operate Public Potable Water Works		
9.19	Connection between an approved water supply and non-approved supply		
9.20	Sewer Systems: Collectors, Pump Station, etc		
9.21	Exemption from Sewer Ban		
9.22	New Jersey Pollution Discharge Elimination System (Specify)DSW	Pending *	NJ 0002089
9.23	Solid Waste Permits (Specify)		
9.24	Air Quality Permits (Specify)		
9.25	Delaware and Raritan Canal Review Zone *Certificate of Approval*		
9.26	Pinelands Certificate		
9.27	Green Acres Program Review "Certificate of Approval" (Specify projects)		
9.28	Other State agencies' permits		
9.29	Local Permits		
9.30	Federal Permits		-
10.	Brief Description of the Proposed Project and Intended Use:		
	See Attachment 1 for a description of the Exxon Bay	onne Site.	
		~	

^{*} CP-1 Submitted May 18,1989 for a NJPDES-DSW "Treatment Works Approval" for a project that adds an end-of-pipe carbon absorption unit.

		11.					
	K. S. Cochrane	· Latherine Stochrane					
	Type: Name and Date	Signature of Applicant/Owner					
	Bayonne Plant Manager	8/14/89					
	Type: Position	Date					
	Type: Name and Date	Signature of Applicant/Operator					
	Type: Position	Date					
	Type: Name and Date	Signature of Co-permittee*					
	Type: Position	Date					
	* To the best of my knowledge and belief after diligent inquiry of persons knowledgeable in these areas. ENDORSEMENTS Some permit applications require specific endorsements of owners, agents,						
		ements may be required for your permit.					
	g., ag. 14						
		ements in the "Requirements" section of the Standard oklet or with the appropriate DEP agency.					
		oklet or with the appropriate DEP agency.					
	Application Form CP #1 bo	oklet or with the appropriate DEP agency.					
	Application Form CP #1 bo PROPERTY OWNER'S CERTIFICA I hereby certify that	ATION* Property Owner's Name ne proposed work is to be done. This endorsement is certification that					
	Application Form CP #1 bo PROPERTY OWNER'S CERTIFICA I hereby certify that is the owner of the property upon which the	Property Owner's Name ne proposed work is to be done. This endorsement is certification that uct of the proposed activity.					
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	Application Form CP #1 bo PROPERTY OWNER'S CERTIFICA I hereby certify that is the owner of the property upon which the owner grants permission for the cond In addition, the aforementioned property 1. Whether any work is to be done within 2. Whether any part of the entire project	Property Owner's Name ne proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed activity: The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity.					
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•••	Application Form CP #1 bo PROPERTY OWNER'S CERTIFICA I hereby certify that is the owner of the property upon which the owner grants permission for the cond In addition, the aforementioned property 1. Whether any work is to be done within 2. Whether any part of the entire project	Property Owner's Name ne proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity. The proposed work is to be done. This endorsement is certification that uct of the proposed activity.					

Not required for Sewer System Application (Treatment Works Approvals)

8.	APPLICANT'S AGENT					
	I, the Applicant/Owneror Applicant/Operator (when					
	the owner of the facility and the operator of the facility are distinct parties)					
	or Co-permittee (when the Co-permittee	is a local governmental unit)				
	authorize to act as my agent/representative in all matters pertaining to my application the following person:					
	Name	PhoneCounty				
	Address					
	City or Town	StateZip Code				
	Occupation/Profession_					
		(Signature of Applicant/Owner)				
		(Signature of Applicant/Operator)				
		(Signature of Co-permittee)*				
	AGENT'S CERTIFICATION					
	Sworn before me thisday of					
	19	I agree to serve as agent for the above-mentioned applican				
	Notary Public	(Signature of Agent)				
c .	PROPER CONSTRUCTION AND OPERATION CLAUSE (Sewer Extensions, Treatment Works Approval, Water Works)					
	I, the Applicant/Owner	or Applicant/Operator (when the owner				
	of the facility and the operator of the fac	of the facility and the operator of the facility are distinct parties)				
		is a local governmental unit)				

(Signature of Applicant/Owner)

(Signature of Applicant/Operator)

(Signature of Co-permittee)*

Not required for Sewer System Application (Treatment Works Approvals)
5

D.	STATEMENT OF PREPARER OF PLANS, SPECIFICATIONS, SURVEYOR'S OR ENGINEER'S					
	I hereby certify that the engineering plans, specific comply with the current rules and regulations of the exceptions as noted.	difications and engineer's report applicable to this project the State Department of Environmental Protection with the				
		(Signature of Engineer)				
		Type: Name and Date				
		Position, Name of Firm				
	DFESSION ENGINEER'S BOSSED SEAL					
_						
E.	OWNER'S COMPLIANCE WARRANT (NJPDE	ES ONLY)				
	I, the Applicant/Owner	or Applicant/Operator (when				
	the owner of the facility and the operator of the facility	are distinct parties)				
	or Co-permittee (when the Co-permittee is a local gove	ernmental entity)				
	hereby agree that any treatment works constructed to	meet the NPDES/NJPDES permit discharge limits will be				
	properly constructed and operated to meet those limit	s. I also warrant that the discharge(s) will meet the				
	effluent limitations as described in the NPDES/NJPDES permit, as issued.					
	× 5/14/89	* 18 Cochrane				
	(Date)	(Signature of Applicant/Owner)				
	(Date)	(Signature of Applicant/Operator)				
	(Date)	(Signature of Co-permittee)*				

^{*} Not required for Treatment Works Approvals

F. PARTY RESPONSIBLE FOR THE CONSTRUCTION OF THE PROPOSED FACILITY (Sewer Extensions, Treatment Works Approvais)

Name of Developer		
Phone		
Address	County	
City	State	Zip Code
Contact Person		

7

11

ATTACHMENT 1 to CP-1, Item 10

SITE LOCATION

The Exxon - Bayonne site is located on Constable Hook in the southeastern portion of the City of Bayonne, N.J. See Figure 1.

The following block and lot numbers identify the entire property on the Bayonne Tax Map:

BLOCK	LOTS	
A	9A ² , 14A	
B1	$Al(D^1)$	
В	A-1, A-2, A-3	
С	4B-2-3/4B1, 4B-2-3/4D, 3N1, 4F, 5, 13A, 1A & 1B, 10A, 8A & 8B	

FACILITIES DESCRIPTION

Two separate Exxon organizations operate facilities on the Bayonne site. Exxon Company, USA (EUSA) operates a petroleum products marketing terminal, and Exxon Chemicals America (ECA) operates a lube oil and fuels additives manufacturing plant along with a laboratory.

The Bayonne Marketing Terminal serves as a wholesale distribution point for various petroleum products, including some blended grades, of fuels, solvents, specialty lubricating oils, waxes, and asphalts. The Terminal inventories some 360 products in over 7 million barrels of aboveground tankage. The fuels products are comprised of three categories:

- * Light Products, e.g. aviation gasoline
- * Distillates, e.g. diesel and No. 2 heating oil
- * Heavy Products, e.g. residual fuel oils.

While bulk transshipment represents the normal activity, some product packaging occurs as well. Products come into and leave by four transportation modes: marine, rail, truck, and pipeline.

The Bayonne Paramins Plant manufactures complex lube oil additives under the trade name "Paramins". These additives, such as viscosity modifiers, pour depressants, and friction modifiers, improve the performance of engine oils. Raw materials come into the Plant by rail, truck and pipeline, and finished products leave by rail and truck. In addition, ECA operates an onsite laboratory for product testing.

EUSA, which owns and operates the wastewater treatment plants, assumes responsibility for coordinating all onsite NJPDES' permitting activities.

WASTEWATER FLOWS

Two surface water outfalls to the Upper New York Bay/Kill Van Kull are permitted under the site's NJPDES/Discharge to Surface Water Permit No. NJ0002089. Presently the outfall DSN002 has been blocked off and all wastewater exits through the DSN001 outfall. A schematic of the non-sanitary wastewater flows, showing the treatment steps, is included as Figure 2. The treatment plants receive the following types of non-sanitary wastewater: non-contact cooling water, boiler blowdown, steam condensate, equipment washwater, groundwater, and stormwater runoff.

Sanitary waste is either sent to the City of Bayonne sanitary sewer system, disposed onsite in septic systems, or sent offsite. Onsite facilities for disposal or holdup consist of fourteen septic tank disposal systems and two holding tanks. Their locations are shown on Figure 3. These systems handle only sanitary waste from sinks, urinals, toilets, and showers from the nearby buildings and toilet facilities. No building floor drains, laboratory drains, or other drains connect into these sanitary disposal systems. Therefore, we believe only sanitary waste is disposed in the onsite septic systems. Sanitary waste from the Main Building and Scalehouse drains is pumped to the city sanitary sewer.

GROUNDWATER

Existing groundwater wells are concentrated in two areas - along the northern property line and along the water front areas. The observation wells on the northern property line straddle a 2000 foot groundwater interceptor trench installed in the mid 1970's. Water from the interceptor trench is pumped into the sewer system. See Figure 4 for the location of the wells and interceptor trench.

In the water front area, some of the groundwater wells serve as oil recovery wells, and are equipped with sump pumps. Two pumps on float control discharge directly to the sewer system. Five pumps on manual control are operated daily and discharge directly to the sewer. Therefore, all groundwater pumped into the sewer system is treated in the site wastewater treatment plants.

Figure 5 depicts the location of all wells registered with the NJDEP Bureau of Water Allocation within a 1/2 mile radius of the site. We believe that there are no municipal or public water supply wells in the vicinity of the site. In fact, based on limited data we believe that the water under the site is brackish and therefore unusable for industrial or domestic uses.

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES



NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM SUPPLEMENT TO THE STANDARD APPLICATION FORM CP #1

APPLICATION TO DISCHARGE WASTEWATERS AND RESIDUALS TO THE STATE'S LAND AND WATER



Answer all questions. Please print or type.

DISCHARGE ACTIVITY

1. Circle the letter(s) for those discharge activities presently conducted or to be conducted as part of the facility's operation.

(Seasonal facility operation shall be considered as a present operation.)

In the space provided, indicate if there is an existing NJPDES or NJPDES permit for each circled activity (yes/no). In the space provided, indicate if this application is for a "new" source, and "existing" source, or a "renewal" of a current permit.

YES/NO

NEW, EXISTING, RENEWAL

)
A.	Sanitary Surface Water			The second secon
B		Surface Water Discharge	YES	EXISTING
B1.	DPCC-DCR/BMP Plan			T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
_	BMP Plan		YES	Included in "B" above.
B3)	DPCC/DCR/Plan		YES	EXISTING
C.	Thermal Surface Water		-	
CG.	General Permit Non-Co	ontact Cooling Water		
D.	Land Application of Sh			
E.	Land Application of In-	dustrial Waste Residuals		
F.	Landfill - Industrial/C	7 T T T T T T T T T T T T T T T T T T T		
G.	Spray Irrigation - Ind	ustrial		
H.	Overland Flow - Indu			
I.	Infiltration/Percolation	Lagoon - Industrial		
I.	Surface Impoundment		-	E CONTRACTOR OF THE PARTY OF TH
K.	Underground Injection	(UIC) — Industrial		
L.	Indirect Discharge to P	OTW (SIU)		
M.	Subsurface Disposal -	- Industrial		
N.	Community Septic Sys	tem		
0.	Landfill - Municipali	ty/Sanitary		
P.	Spray Irrigation - Sar			The second secon
Q.	Overland Flow - Sani			
R.	Infiltration/Percolation	Lagoon - Sanitary		
S.	Surface Impoundment	- Sanitary		
T.	Underground Injection	(UIC) - Sanitary		
U.	Dredge Spoils	44.1		
V.	Sludge Processing/Dist	ribution Facility		
8	Oil/Water Separators		YES	Included in "B" above.
X.	Confidentiality Reques	d d		
Y.	316 Variance Work			
2	Residuals Transfer Fac	ilities (Shudge)		
る.	Subsurface Dis	ilines (Shadge) sposal - Sanitary	NO	EXISTING
1.	Municipal Solid Waste	Transfer Facility		
2	Sanitary Sludge Storag			
3.	Residuals Infiltration/F			
4.	Residuals Surface Imp			
5	Group I - Stormwater			
@	General Permit Industr	rial Site Storm Water Runoff	YES	EXISTING
6.		ermit Stormwater Runoff		
0	Underground Storage		N/A	Tanks are registered & shown
8.	Other/Miscellaneous			only as a potential discharge
9.	Master Performance P	ermits		
	india, diominio,			
Loc	ation of Discharge:	Latitude 40° 39' 16"	Longitu	de 74° 05' 14"
		Receiving Stream Upper		y/Kill Van Kull
		River Basin		The second second
		W	Over)	

failing Address	1200 Smith Street, 1	P.O. Box 4415			
ity or Town	Houston	State Texas	Zip Code 77210-4415		
acility's Contact	Person (This person must be	responsible for and familiar with the fac	ility operation.)		
ame Carl	J. Hess	Telephone No	(201) 858-7091		
ddress of Opera	tor _250 East 22nd S	treet			
ity or Town	Bayonne	State N.J.	Zip Code 07002-9000		
the facility a	☐ Federal Facility	☐ Public Facility (a local government	nent subdivision)		
	☐ State Facility	Private Facility			
ist in order of pr	riority all Standard Industrial	Codes (SIC) which best reflect the princ	ipal products or services provided		
y the facility.					
	SIC	PRODUCTS OR	SERVICES PROVIDED		
	5171	Petroleum Bulk Station & Terminal			
	2869	Mfq. of Lubricating Oil Additives *			
2992		Blending & Storage of Lubricating Oils			
	2999		e of Various Petroleum P		
penalties, or crim	2999 atify all administrative orders, inal actions concerning pollutions		e of Various Petroleum P		

^{*} Operated by Exoxon Chemical Americas (ECA)

ATTACHMENT 2 TO WOM-001, ITEM 7

ENFORCEMENT ACTION	DATE OF ACTION	RESULT
U. S. Coast Guard Oil Spill Citation Case No. 01918700604800	July 24, 1989	Pending
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG #A891716 MRA, CDS	July 17, 1989	Pending
NJDEP - Div. of Water Resources Admin. Order & Notice of Civil Admin. Penalty Assessment	May 19, 1989	Settlement Agreement negotiated July 20, 1989
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG # A880599 MRA, CDS	Sept. 30, 1988	Order conditions met. \$800 penalty paid.
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG # A880600 MRA, CDS	May 19, 1988	Order conditions met. \$200 penalty paid.
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG # A880601 MRA, CDS	May 19, 1988	Order Conditions met. \$800 penalty paid.
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG # A8760821 MRA, CDS	June 29, 1987	Order conditions met. \$400 penalty paid.

ENFORCEMENT ACTION	DATE OF ACTION	RESULT
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG # A870822 MRA, CDS	June 29, 1987	Order conditions met. \$2400 penalty paid.
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG # A870823 MRA, CDS	June 29, 1987	Order conditions met. \$2800 penalty paid.
NJDEP - Div. of Environmental Quality Admin. Order & Notice of Civil Admin. Penalty Assessment LOG # A870047 MRA, CDS	January 14, 1987	\$1000 penalty paid. Permit amendment pending.]
U. S. Coast Guard Oil Spill Citation Case No. MV87004133	March 18, 1988	\$1500 penalty paid.
U. S. Coast Guard Oil Spill Citation Case No. 03/1142-85-M	January 13, 1987	\$2000 penalty paid.
U. S. Coast Guard Oil Spill Citation Case No. 03/0131-86-M	September 24, 1987	Admin. process complete. Case contested; awaiting further legal action.
NJDEP Hazardous Waste Manifest Violation No. HW 00695	June 14, 1985	\$875 penalty paid.
U. S. Coast Guard Oil Spill Citation Case No. 03/0438-NYC/84	April 2, 1985	\$3000 penalty paid.
U. S. Coast Guard Oil Spill Citation Case No. 03/0619-NYC/84	April 2, 1985	\$395.52 penalty paid.

11

ENFORCEMENT ACTION	DATE OF ACTION	RESULT
U. S. Coast Guard Citation Oil Spill Citation Case No. 03/0261-NYC/84	July 24, 1985	\$100 penalty paid
U. S. Coast Guard Citation Oil Spill Citation Case No. 03/0341-NYC/84	February 20, 1985	\$75 penalty paid.
U. S. Coast Guard Citation Oil Spill Citation Case No. 03/0310-NYC/84	February 27, 1985	\$500 penalty paid.
U. S. Coast Guard Citation Oil Spill Citation Case No. 03/1074-NYC/83	October 1, 1984	Admin. process complete. Case contested; awaiting further legal action.
U. S. Coast Guard Citation Oil Spill Citation Case No. 03/1059-NYC/83	August 30, 1984	\$100 penalty paid
U. S. Coast Guard Citation Oil Spill Citation Case No. 03/1055-NYC/83	September 28, 1984	Admin. process complete. Case contested; awaiting further legal action.

1

ATTACHMENT 3 TO WOM-001, ITEM 8

STORAGE SITE(S)

ULTIMATE DISPOSAL SITE(S)

Sludges - CECOS, Niagara Falls, NY

Sanitary Waste - Middlesex Co. Utility Authority, Sayreville, NJ

Tank 1090 - Exxon Bayonne Plant

Non-Hazardous Liquid Waste - Exxon Bayway Refinery, Linden, NJ

Oil Spill Cleanup Debris - CECOS, Niagara Falls, NY

General Non-Hazardous Industrial Waste - HMDC Landfill, North Arlington, NJ 12/81 ·



MEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION. DIVISION OF WATE: RESOURCES MEW JERSEY POLLUTANT DISCHARGE PLYINATION SYSTEM INJUDIES.

APPLICATION FOR PERMIT TO DISCHARGE EFFLUENT TO GILLUNDWATER



Application for Groundwater and other Discharp Fermits (Check cop: priors type)

If - Wasterwater from-Levelfills

G - Sorry Irrigation

H - Overland Flow

. Application for Grounowater and other	G-Sersy Irrigation	H - Overland Flow
1 - Infiltration-percolation Lagon	☐ J - Eurhot Imequatment	Subsurface Disposal-Sanita
		Other potential discharges are identifi
List each soil mapping unit present.		in the Site's DPCC Plan.
The site and vicinity is man		
		tgers Univ. 1952). Approximately 30% of
the site contains cinder fil	l overlying organic sil	t and clay, in turn overlying glacial fill
deposits of silt, sand, and	gravel.	
· Post-C	ordovician Serpentine (e	astern portion of site), Triassic Stockton
Geologic formation name (s) Format	ion (western portion of	site) See Figure 6.
Shellowes: overburden depth 10 fee		444, 444 h-344 M
Supply the minimum _2_ ft., max	mum $\underline{-6}$ ft. depth to the wa	ter table using monitoring wells and/or borings and
den masuredcirca 1979		
	Tidal fluctuation	s with a mean tidal range of 4.5 feet
Describe assected water table fluctuati	ent - IIdai IIdetdation	s with a mean tidal lange of 4.5 feet
Do all springs have a continuous year-	THE THE	M ne, exptein No springs are present.
Do all springs have a continuous year-	COUNS TIGHT LE 184 LE 140	11 14, 1411111
Has bedrack decomposed to seprolite	TV- DN H	describe sexture.
Hat are ask eros space a sup-end		
(
If hartrest is curbaners mak are then	s see underived surface depressio	ns, solution channels or sinkholes? (Describe)
N/A		Market Company of the
6 4		
		
). If she is within a glaciated area, sheci	decests arment: 🖾 Glasial	Collegial . DAllegial Description
	So So	ft, marine organic silt and clay;
A. Describe the type and taxter of	THE UNIQUESIES WE STITLE.	ad grans i
	stratified silt, sand a	
S. The minimum 10 ft, maxim	um _35 to slotnes of more	riel and how it was determined from borings drille
circa 1979 in limite	d areas.	

							Labe 5
			Ay Ay				
L		series of thech . The on these mass		ce discharges			
		ermeable upper fill mate				impermeab	le organ
	Do any underground a	ays act as a partial bar	k mile of the fac	tical migrati ility boundaries?	TY Yes	Z No H	YES, STISWE
		I maximum depth of surface or de	eep mines within	M. mile is			
		's mineral resource extracted, sou			tive mining.	and extent o	f mines-out
	C. Does the grounde	versir drain into the mines?	Yes - No	4	* 19		
2.	Describe all perched o	r special wear table conditions.	The stratum	of silty clay	which m	nderlies	
	the Kill provid	es a partial confining l	layer within	the upper un	confined	acuifer.	
1.	Describe below using	numbers keyed to weter supply it	non for all arous	deser monitorio	paints for	energy	
	(Arrach additional she		net in the face.		1.5.11.		
	,			IING	100	TIONT	
	MONITORING POINT	BRILLING	SIST &	PERFORATED			BURFA
	2	METHOD DEPTH	-	-	1		
							-
					-		
				1			<u> </u>
	* Zones or depths of ? Report in degrees,						
	-						
		it the proposed sits is pen	SETT.				
i.	I ne mexamom pope						
	3.	nes of folding as it applies to the s	N/A				
	3.	nes of folding as it applies to the s	ite. N/A				
	Describe the occurren	nes of folding as it applies to the s	ite. N/A				
	A. Strike		de. N/A				
	A. Strike	nd plunge of fold sale	siteN/A				
	A. Strike s B. Location of site	nd plunge of fold sais in relation to least structure					
	A. Strike s B. Location of site	nd plunge of faid sais in relation to least structure trach additional shares as necessi		BIP*			RMATION
	A. Strike s B. Location of site	nd plunge of fold sais in relation to least structure		sp.			RMATION
	A. Strike s B. Location of size C. Attitude of: (A)	nd plunge of fold sais in relation to least structure track additional share as passess ################################	ns —	9-12° N.W.		Stockt	
	A. Strike S B. Location of site C. Attitude of: (A)	in relation to least structure track additional shares as necessary TTRIKE*	m)	 9-12 [°] N.W.		' Stockt	on Fm
	A. Strike S B. Location of size C. Attracte of: (A:	nd plunge of fold sais in relation to least structure track additional share as passess ################################	m)			1000	on Fm
	Describe the occurrent A. Strike B. Location of size C. Attitude of: (A) a. Seekling b. Johnsing c. Cleavege	in relation to least structure track additional shares as necessary TTRIKE*	m)	 9-12 [°] N.W.		' Stockt	on Fm
	A. Strike S B. Location of size C. Attitude of: (A: a. Seekling b. Johnsing c. Cleaveys d. Fourts	in relation to least structure track additional shares as necessary TTRIKE*	ns —	 9-12° N.W. vertical		' Stockt	on Fm

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: 5

	northern New Jersey, e.g.						
hydraulically interconnected with the overlying unconsolidated sediments							
	Ground water flow in the b	edrock occu	rs along b	edding plane	es and		
	fractures in the rock.			U.Territoria			
	A. Indicate If there are soil herizons that may not be particular enough for the rate of wasterwater application, and describe how the problem will be everyone.						
	The organic silt and clay has pe	rmeability va	lues ranging	from 6.7 x 10	-8 to 8.9 x 10		
	cm/sec as seen from consolidation			Control of the Contro			
	would indicate a partial impedan						
	AFTER CONSULTATION WITH THE DEPA (Attach additional share at necessity. Other PARAMETERS				METHOD		
	Total Kjeldahi Nisropin (mg/l)		-		REFERENCE		
	Tetal Organic Carbon (ma/l)						
	Tetal Organic Carbon (mg/t)						
c .	Total Organic Carbon (mg/l) pH (Standard Units) Electrical Conductivity (micromhos/sm If fragipen is present, Indicate shallowest depr	rad how depth	was determined.				
c .	pH (Standard Units) Electrical Conductivity (migramhas/gm	end how depth	was determined.				
S.	pH (Standard Units) Electrical Conductivity (migramhas/gm	end how depth	was determined.				
c .	pH (Standard Units) Electrical Conductivity (migramhas/gm	rad how depth	was determined.				
C.	pH (Standard Units) Electrical Conductivity (micromhos/sm If fragipan is present, indicers shallowest depr			operational dates.			
c.	pH (Standard Units) Electrical Conductivity (micromhos/sm If fragipan is present, indicers shallowest depr	□No M		operational datas.			
	pH (Standard Units) Electrical Conductivity (micromhes/gm If fragipan is present, Indicate shallowest depresent this to an all-season operation?	□No M	ermonel, provide	operational dates.			
	pH (Standard Units) Electrical Conductivity (micromhos/sm If fragipan is present, indicers shallowest depr	No M	sessonel, provide	operational dates.			
Pro	pH (Standard Units) Electrical Conductivity (micromhes/sm If fragipen is present, Indicate shallowest depresent in this to an all-sesson electricism? Electrical Conductivity (micromhes/sm If this to an all-sesson electricism? Electrical Conductivity (micromhes/sm If this to an all-sesson electricism? Electrical Conductivity (micromhes/sm If this to an all-sesson electricism) Electrical Conductivity (micromhes/sm If this to an all-sesson electricism) Electrical Conductivity (micromhes/sm	No M	ermonel, provide	operational datas.			
Pro-	pH (Standard Units) Electrical Conductivity (micromhes/sm If fregipen is present, Indicate shallowest depresent shallowest depresent shallowest depresent this to an all-easen operation? E) Yes cipitation (In./yr.) Maximum 65.5	No H Average 42.5 11.84 Avera	semonal, provide				
Pro. Mo	pH (Standard Units) Electrical Conductivity (misramhes/sm If fragipan is present, Indicers shallowest depresent in this to an all-essen operation? On this to an all-essen operation? On this precipitation (In./ma.) Maximum	Average 42.5	3 3.53	t, 132 years	arl		

24.	AFTER CONSULTATION WITH THE DEPARTMENT, complete this table for background water quality. (mg/l, union specified
	Additional testing may be required.)
	Explain methodology of:

EX	Plain methodology of:
	Sample Collection
	Sample Preservation and Shipment
	Analytical Proordures
	Chain of Custody

PARAMETER	MONITORING POINT	MONITORING POINT #	MONITORING
Temperature (°C)			
pH (Standard Units)			
Alkelinity			
Total Dissolved Solids			
Suspended Solids			
Total Dissolved Solids			
MBAS			
BOD			
COD			
Specific Conductance (Micromhos/em)	2.29/2/2/201		
Total Iron		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Manganese -			
Aluminum .			
Copper			
Zine			
Nickel			
Chromium			
Sulfate			
Chloride			
Fluoride			
Total Kjeldahi Nitrogen			
Ammonium Nitrogen			
Nitrate Nitrogen			
Phaephorus			
Total Organic Carbon (TOC)			
GC or GC/MS Scen*			
			1,
			Land Towns

This is required for all facilities producing, processing, storing, or disposing of organic chemicals.
 (Use additional sheets as necessary.)

25.	Describe the origin, volume, treatment (prior to discharge) and mode of transportation of affluent which is or will be land-applied
	or discharged to a system.

Non-sanitary wastewater is treated and discharged to surface water as shown on Figure 2.

Onsite disposal sites for sanitary waste are shown on Figure 3.

26. AFTER CONSULTATION WITH THE DEPARTMENT, respond as indicated. For G, H, I and J complete Items 1-14 of Table "A".

When requested by the Department, complete full table. (Report in mg/l, unless specified. — Additional information may be required.)

TABLE "A"

PARAMETER	ANALYSIS (RAW)	(TREATED)	"LBS/ACRE	LAB & DATE PERFORMED
1. Ammonium-Nisrogen (NH ₄ -N)				
2. Nitrate-Nitrogen (NO ₃ -N)				
3. Organic Nitrogen (N)				
4. Total Kjeldshi Nitrogen (TKN)				
5. Biochemical Oxygen Demand (BOD _E)				
6. Chemical Oxygen Demand (COD)				
7. Total Dissolved Solids (TDS)				
8. Suspended Solids (TDS)				
9. pH (Standard Units)				
10. Specific Conductance (micromhos/sm)				
11. Calcium (Ce)				(X =
12. Magnesium (Mg)				
13. Sodium (Na)				
14. Phosphorus (P)				
15. Total Organic Carbon (TOC)				
16. Voletile Solids (% of TS)				
17. Potassium (K)				
18. fron (Fe)				
19. Arsenic (As)				
20. Codmium (Cd)				
21. Copper (Cu)				
22. Leed (Pb)				
23. Mercury (Hg)				i.
24. Mickel (Ni)				
26. Zinc (Zn)				
26. Aldrin				
27. Dieldrin				

26. TABLE "A" continued

...

PARAMETER	ANALYSIS (RAW)	AMALYSIS ITREATED)	"LBS/ACRE	LAB & DATE PERFORMED
28. Endrin				
29. Heptachlor				
30. Heptachlor-Epoxide				
31. DDT				
32. p.p'-DDE				
33. p.p'-TDE				
34. Methaxychlar 😁 🔅				
35. Chlordene				
36. Lindene				
37. Mirex				
38. PCB's				
39. Toxaphene				
40. Cyanide				
41. Oil & Green				
42. Phenois				

^{*} Furnish supporting calculations

D	orders on the navigable Waters of	the Kill	Van Kull	and New 101	K Day.		
	rs any changes enticipated in use of adjacent lands	Yes	™ No	If yes, explain	None	known.	

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ATTACHMENT 4 TO WOM-2, ITEM 23

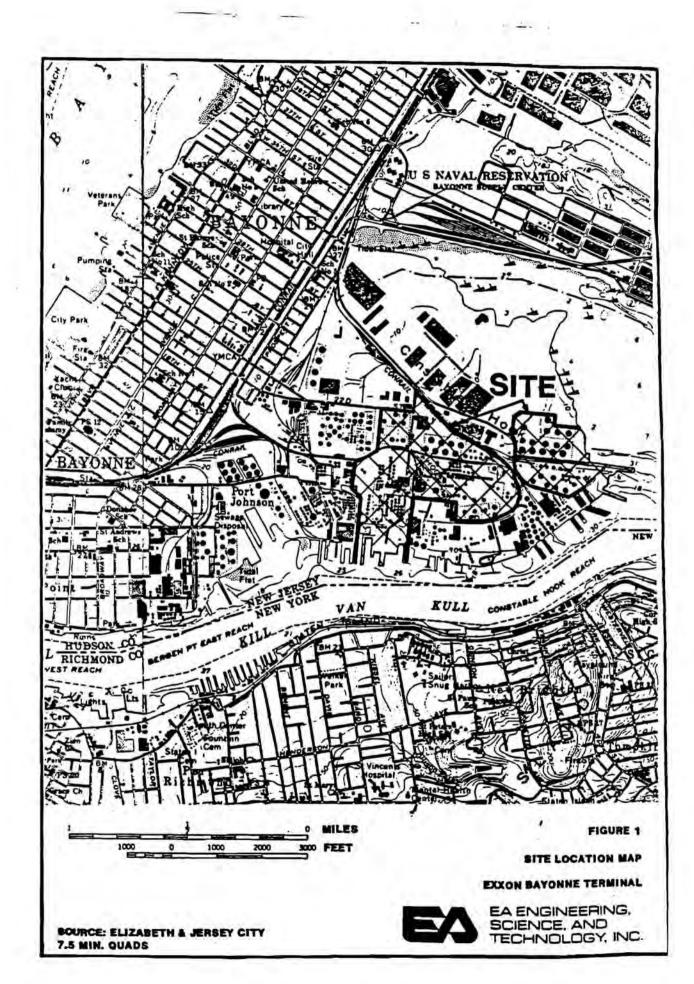
Background water quality has never been determined throughout the entire site. However, due to the type of facility and the nature of operations that were historically conducted at the site, some hydrocarbons were released to the environment. When hydrocarbons were discovered, recovery operations were initiated. This is evidenced by the installation in the early 1970's of an interceptor trench on the northern property line and recovery wells in the waterfront area of the site. There may be other areas on the site where hydrocarbons exist but have not year been discovered.

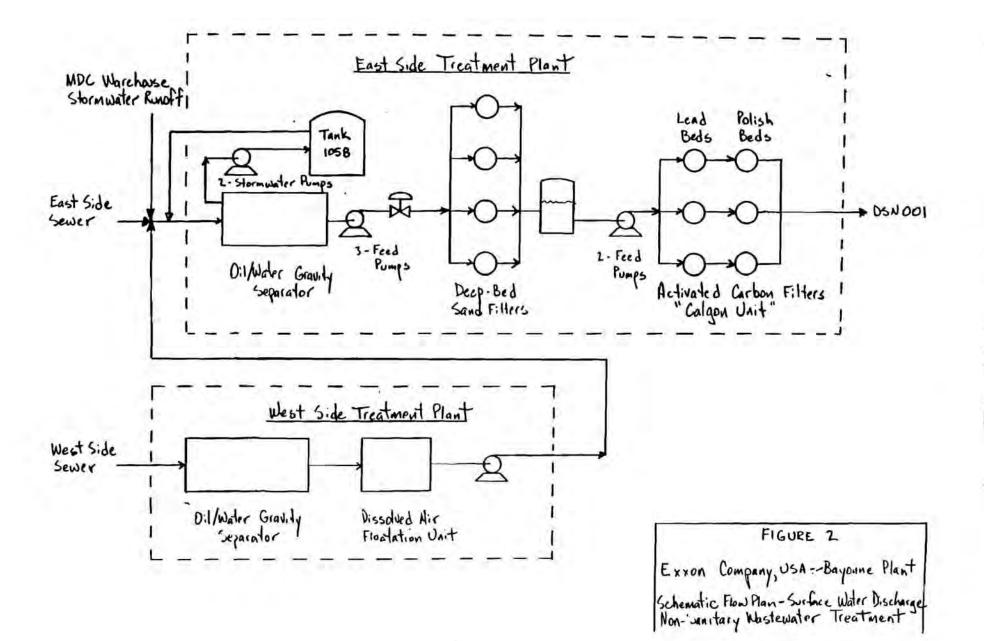
TABLE 1
Wells Registered with the NJDEP Bureau of Water Allocation, within 1/2 Mile of Site

NJ Coordinates	Owner	Owner's Well Number	Date Drilled	Total Depth (ft)	Well Diameter (in.)	Use	Yield (GPM)
1. 2623751	Pen Gad, Inc.	MW-1	1/7/88	14.5	4	Monitoring	N/A
2. 2623754	Getty Petroleum Corp.	MW-1	5/24/88	15	4	Monitoring	N/A
	Carlo M. J. Connect. named and	MW-2	5/24/88	14	4	Monitoring	N/A
		MW-3	5/24/88	13.5	4	Monitoring	N/A
3. 2623763	Esso Standard Oil Co.	1	11/12/59	505	10-12	Test Well *	3
4. 2623815	City of Bayonne	MW-1	6/27/88	33	4	Monitoring	N/A
State State State		MW - 2	6/27/88	30	4	Monitoring	N/A
		MW-3	6/27/88	30	4	Monitoring	N/A
		MW-4	6/27/88	30	4	Monitoring	N/A
		MW-5	6/27/88	29	4	Monitoring	N/A
5. 2623818	City of Bayonne	1-24 **	9/14/88	10	2	Gas Venting (Landfill)	N/A

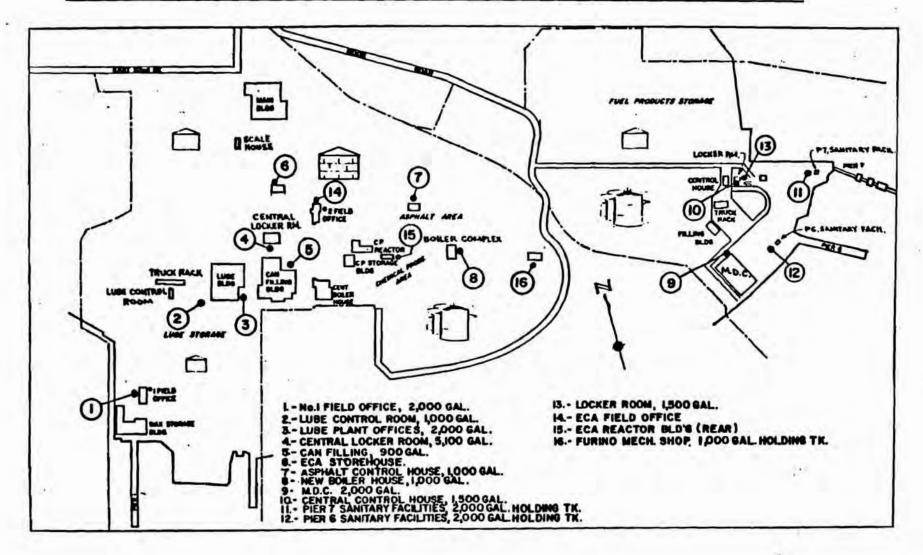
^{*} Test well drilled in 1959. Exact location unknown.

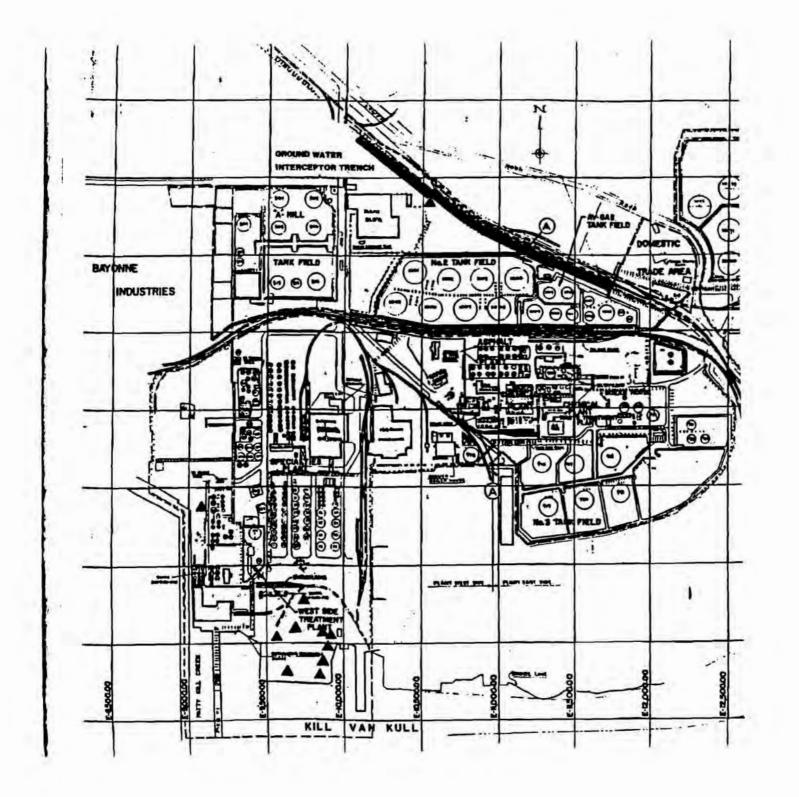
^{**}City of Bayonne installed 24 gas venting wells into the city landfill. All wells are exactly the same dimensions.

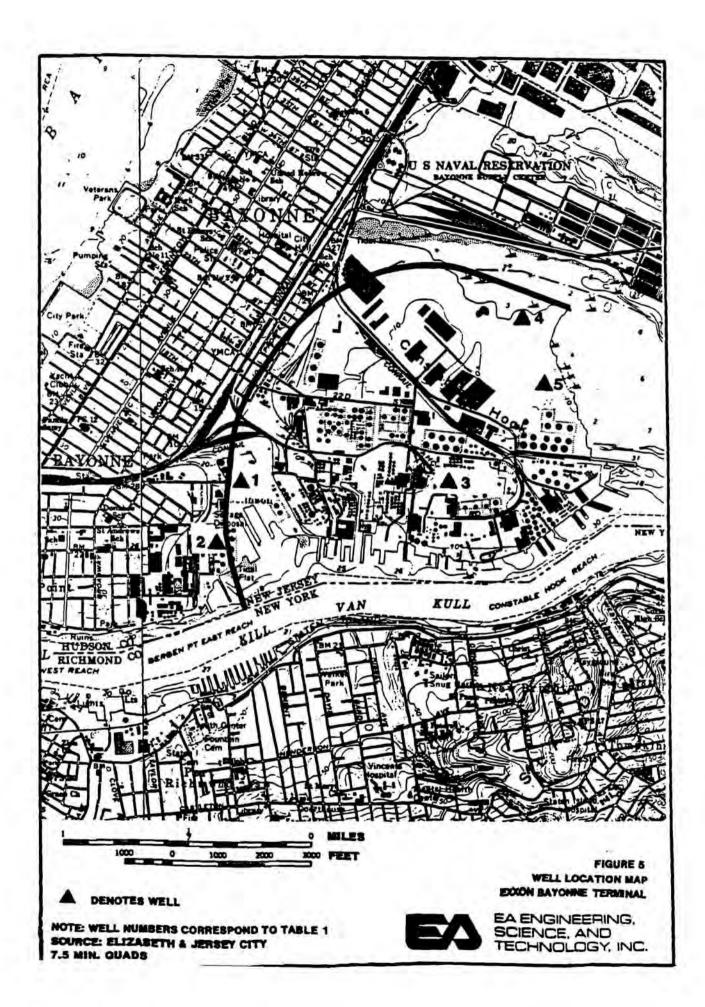


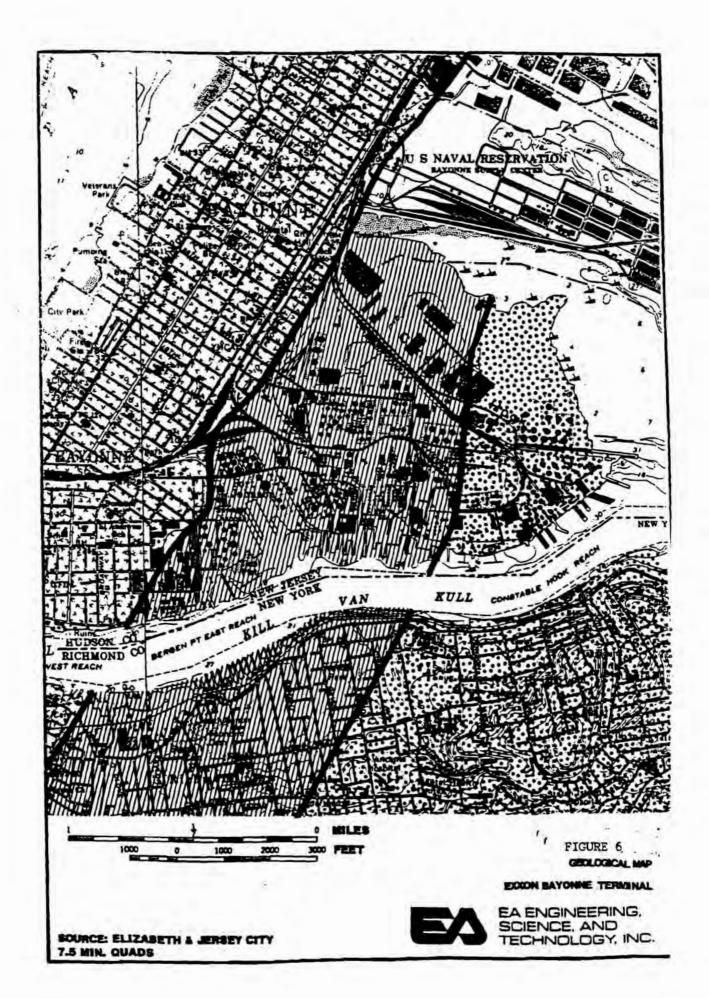


EXXON-BAYONNE EXISTING SEPTIC TANK LOCATIONS FOR SANITARY WASTE









ATTACHMENT I-III

EXXON U.S.A. PERMIT EXPIRATION REPORT (1991)

4PDATED 19/11

SPINO

EXXON PROPRIETARY EXXON U.S.A. PERMIT EXPIRATION REPORT PERMITS WITH LESS THAN 90 DAYS UNTIL EXPIRATION AS OF 10/10/91 FACILITY IO: BAYONNE

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PERMIT NO	PERMIT NAME	AGENCY	EFFECTIVE DATE	EXPIRATION DATE	DAYS UNTIL	STATUS
MARINE-DIO7	MARTHE DADIO I VOENEE	ESPERAL COMMUNICATIONS ASSU				******
	MARINE RADIO LICENSE	FEDERAL COMMUNICATIONS COMM	10/31/86	10/31/91	21	A
MARINE-DITO	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES		01/01/92	83	A
MARINE-0111	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES		07/01/91	(101)	A .
MARINE-0112	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES		01/01/92	83	A
MARINE-0114	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES		01/01/92	83	A
XXXX -0004	UST2 AIR PERMIT	NJDEP, DIV OF ENV QUALITY	Status was salv			G
XXXX-OCOS	BOILER 1 & 2 AND CHX STACK	NUDEP, DIV OF ENV QUALITY	03/17/86	11/15/91	36	A PERMIX INACTIVE
XXXX -0007	NUPDES DEW PERMIT	HUDER, DIV OF WATER RESOURCES	07/01/00	06/30/01	(102)	Arconia
XXXX-UUUB	JARA 111 - 312 REPORT	MOBER, BIY OF ENV QUALITY	TOUR TIME SOUT	113/13/91	(209)	A DUPLICATE
XXXX-0014	WELDING AND HOT WORK PERMIT	USCG - DEPT OF TRANSP	10/25/88	10/25/91	, 15	A
XXXX-0019	MAIN BLOG REFRIG COMPRESSOR	NU DEPT OF LABOR GELGI	86425488	-06/21/914	126/92 (105)	A
XXXX-0050	MAIN BLOG REFRIG COMPRESSOR2	NO DELL OF ENDOR	06/22/89	06/27/01	136/92 (105)	A
XXXX-0026	F J ALBIETZ WWTP LICENSE	NJDEP, DIV OF ENV QUALITY 6/26/91		09/30/914	(10)	A
XXXX-0027	R SCERBO WWTP LICENSE	NJDEP, DIV OF ENV QUALITY	05/18/81			A
XXXX-0029	F ALBIETZ GOLD SEAL BOILER	NJDOL, MECH INSP BUREAU		06/30/91	(102)	AAA
XXXX-0034	D GOODSON BLUE SEAL BOILER	NJDOL, MECH INSP BUREAU		09/30/91	(10)	A
XXXX - 0036	R HORN BLUE SEAL BOILER	NJDOL, MECH INSP BUREAU		11/30/91	51	A
XXXX-0037	O COACHMAN BLUE SEAL BOILER	NJDOL, MECH INSP BUREAU		02/28/90	(589)	R
XXXX DD38	VRU PERMIT	S: NJDEP. DIV OF ENV QUALITY	07/27/88	10/09/91	(1)	A TEMP CERT
XXXX-0041	REPORT - HAZ. WASTE GEN	HUDSON REGIONAL HEALTH COMMISS	03/01/91	01/01/92	83	A
3143-0002	TANK-1054 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143 0003	TANK 1055 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143 0004	TANK 1056 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0006	TANK 1057 AIR PERMIT	NUDER, DIV OF ENV QUALITY				G
3143 0007	TANK 1058 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143 0008	TANK 1060 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0009	TANK 1061 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0010	TANK 1062 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0012	TANK 1063 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0013	TANK 1064 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0014	TANK 1071 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0015	TANK 1072 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0016	TANK 1073 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0018	TANK 917 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				STEMP PERMIT
3143-0021	TANK 920 AIR PERMIT	NJDEP, DIV OF ENV QUALITY	12/24/88	11/09/91	30	ATEMP PECITI
3143-0023	TANK 1065 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0024	TANK 1066 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0025	TANK 1067 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0026	TANK 1068 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143 0027	TANK 1069 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0028	TANK 1070 AIR PERMIT	NUDER, DIV OF ENV QUALITY				G
3143-0029	TANK 501 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143 0030	TANK 502 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
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143-0033	PERMIT NO	PERMIT NAME	AGENCY	EFFECTIVE DATE	EXPIRATION DATE	DAYS UNTIL	STATUS
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3143-004	3143-0042	TANK 1004 AIR PERMIT	[10] [10] (10] (10] [10] [10] [10] [10] [10] [10] [10] [G
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3143-0046 TANK 1007 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/24/88 11/09/91 30 A TEMP CESST. 143 0052 TANK 1008 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/18/90 11/09/91 30 A TEMP CESST. 143 0052 TANK 1014 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/18/90 11/09/91 30 A TEMP CESST. 143 0055 TANK 1015 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/18/90 11/09/91 30 A TEMP CESST. 143 0055 TANK 1024 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/18/90 11/09/91 30 A TEMP CESST. 143 0056 TANK 1025 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/18/90 11/09/91 30 A TEMP CESST. 143 0058 TANK 1025 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/18/90 11/09/91 30 A TEMP CESST. 143 0058 TANK 1025 AIR PERMIT NJDEP, DIV OF ENV QUALITY 12/18/90 11/09/91 30 A TEMP CESST. 143 0058 TANK 1025 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G TANK 1046 AI	3143-0044	TANK 1006 ATR PERMIT					Ğ.
3143-0046 TANK 1008 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0057 TANK 1014 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0053 TANK 1015 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0055 TANK 1017 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0056 TANK 1017 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0057 TANK 1024 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0058 TANK 1025 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0058 TANK 1025 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0050 TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0051 TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0057 TANK 1046 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0058 TANK 1089 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0059 TANK 1089 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0076 TANK 1089 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0081 TANK 1081 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0082 TANK 983 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0083 TANK 1081 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1081 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0080 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3145-0000 TANK-0 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3145-0000 TANK-0 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3	3143-0045	TANK 1007 AIR PERMIT					ē.
3143-0047	3143-0046	TANK 1008 AIR PERMIT					Ğ
143-0053	3143-0047			12/24/88	11/09/91	30	A TEMP CENT.
143-005	3143 0052			The late of the la	13100097-732727		
1143-0055				121,121,02			
3143-0057				12/18/90			A
3143-0058				2, 42, 42	20000000		G SEMPCBEI
143-0064							G
1143-0071							
143-0073							G
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3143-0076							G
3143-0080				09/19/88			•
3143-0081 TANK 1092 AIR PERMIT NJDEP, DIV OF ENV QUALITY G				03713700			c c
3143-0082	The state of the s						c c
3143-0083							
3143-0084 TANK 659 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0087 TANK 1049 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0088 TANK 1051 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0089 TANK 1100 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0090 TANK 1101 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3143-0157 I DIONISIO - IRPL CERTIF NVC FIRE DEPT - FIRE PREVENT 11/05/90 09/30/91 (10) A 3143-0162 P J RICE - IRPL CERTIF NVC FIRE DEPT - FIRE PREVENT 11/05/90 12/31/91 82 A 3146-0001 TANK-1 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0002 TANK-2 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0003 TANK-3 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0004 TANK-4 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0005 TANK-5 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY							
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3143-0162 P J RICE - IRPL CERTIF NVC FIRE DEPT - FIRE PREVENT 11/05/90 12/31/91 82 A 3146-0001 TANK-1 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0002 TANK-2 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0003 TANK-3 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0004 TANK-4 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0005 TANK-5 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0008 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G				11/05/90	09/30/91	(10)	-
3146-0001 TANK-1 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0002 TANK-2 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0003 TANK-3 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0004 TANK-4 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0005 TANK-5 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G	FIDER GOTTO				(4.5°C, 7°C, 7°C, 10°C)		
3146-0002 TANK-2 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0003 TANK-3 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0004 TANK-4 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0005 TANK-5 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G				11100100	1270170	7.5	
3146-0003 TANK-3 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0004 TANK-4 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0005 TANK-5 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G G G G G G G G G G G G							
3146-0004 TANK-4 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0005 TANK-5 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3140-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G G							
3146-0005 TANK-S AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY G 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G	T						
3146-0006 TANK-6 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G	1 30 000 and 12 at 12 at 1						
3146-0007 TANK-7 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G							
3146-0008 TANK-8 AIR PERMIT NJDEP, DIV OF ENV QUALITY 3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY G		그 아이는 경우 아이를 가는 것 같아요.					č
3146-0009 TANK-9 AIR PERMIT NJDEP, DIV OF ENV QUALITY							
3170 0000							G
3140-UUID IANK-10 AIR PERMIT NODEF, DIV OF ERV GONETTY			177 T.T. THE TOUR DESIGNATION OF THE STATE O				
	3146-0010	IANK-10 AIR PERMIT	MODER, DIV OF ENV QUALITY				•

EXXON PROPRIETARY EXXON U.S.A. PERMIT EXPIRATION REPORT PERMITS WITH LESS THAN 90 DAYS UNTIL EXPIRATION AS DF 10/10/91 FACILITY ID: BAYONNE

PERMIT NO	PERMIT NAME	AGENCY	EFFECTIVE DATE	EXPIRATION DAYS UNTIL DATE EXPIRATION	STATUS
	22222222	THE STATE OF THE S			22222
MARINE-0107	MARINE RADIO LICENSE	FEDERAL COMMUNICATIONS COMM	10/31/86	10/31/91 21	A —
MARINE-0110	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES	APTIGUES.	01/01/92 83	A
MARINE-0111	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES		07/01/917/1/92 (101)	A-
MARINE-0112	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES		01/01/92 83	A
MARINE-0114	BOOM BOAT REGISTRATION	NJ DIV OF MOTOR VEHICLES		01/01/92 83	7
XXXX-0004	UST2 AIR PERMIT	NJDEP, DIV OF ENV QUALITY		2.12.132	Ĝ
XXXX-0005	BOILER 1 & 2 AND CHX STACK	NUDEP, DIV OF ENV QUALITY	03/17/86	11/15/91 36	
XXXX -0007	NUPDES DEW PERMIT	NUDER, DIV OF WATER RECOURCES	07/01/00	06/30/01 (102)	A PERMIK INACTIVE
XXXX-DOUB	3888 111 - 312 REPORT	HUBER, BIV OF ENV QUALITY	********	03/15/91 (209)	A DUPLICATE
XXXX-0014	WELDING AND HOT WORK PERMIT	USCG - DEPT OF TRANSP	10/25/88	10/25/91 15	
8100-XXXX	MAIN BLDG REFRIG COMPRESSORT	NJ DEPT OF LABOR	06/22/89	06/27/016/27/92(105)	A Revener
XXXX 0020	MAIN BLDG REFRIG COMPRESSOR2	NJ DEPT OF LABOR	06/22/89	08/27/916/22/92(105)	A Francis
XXXX 0026	F J ALBIETZ WWTP LICENSE	NJDEP, DIV OF ENV QUALITY	44,44,44	09/30/94 (10)	A- RENEWED
XXXX-0027	R SCERBO WWTP LICENSE	NJDEP, DIV OF ENV QUALITY	05/18/81	31.4	A
XXXX-0029	F ALBIETZ GOLD SEAL BOILER	NJOOL, MECH INSP BUREAU	521,451.21	06/30/016/30/7/(102)	A- Revened
XXXX-0034	D GOODSON BLUE SEAL BOILER	NJDOL, MECH INSP BUREAU		09/30/91 (10)	
XXXX-D036	R HORN BLUE SEAL BOILER	NJDOL, MECH INSP BUREAU		11/30/91 51	A
XXXX-0037	O COACHMAN BLUE SEAL BOILER	NJDOL, MECH INSP BUREAU		02/28/00 (509)	R -268/92 Rovemed
BEOD XXXX	VRU PERMIT	S: NJDEP, DIV OF ENV QUALITY	07/27/88	10/09/91 (1)	A TEMP CELT
XXXX-0041	REPORT - HAZ, WASTE GEN	HUDSON REGIONAL HEALTH COMMISS	03/01/91	01/01/92 83	A
3143-3002	TANK-1054 AIR PERMIT	NJDEP. DIV OF ENV QUALITY		737234329	G
3143-0003	TANK 1055 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0004	TANK 1056 AIR PERMIT	NJDEP. DIV OF ENV QUALITY			G
3143-0006	TANK 1057 AIR PERMIT	NJDEP. DIV OF ENV QUALITY			G
3143-0007	TANK 1058 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0008	TANK 1060 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0009	TANK 1061 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0010	TANK 1062 AIR PERMIT	NUDER, DIV OF ENV QUALITY			G
3143-0012	TANK 1063 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0013	TANK 1064 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0014	TANK 1071 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0015	TANK 1072 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0016	TANK 1073 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0018	TANK 917 AIR PERMIT	NUDEP, DIV OF ENV QUALITY	200 200 200	5-1124.40	TEMP PERMIT
3143-0021	TANK 920 AIR PERMIT	NJDEP, DIV OF ENV QUALITY	12/24/88	11/09/91 30	ATEMP PEC
3143-0023	TANK 1065 AIR PERMIT	NIDEP, DIV OF ENV QUALITY			G
3143-0024	TANK 1066 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0025	TANK 1067 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0026	TANK 1068 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143 0027	TANK 1069 AIR PERMIT	NUDER. DIV OF ENV QUALITY			6
3143-0028	TANK 1070 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G
3143-0029	TANK SOI AIR PERMIT	NUDER, DIV OF ENV QUALITY			6
3143-0030	TANK 502 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			6
3143-0031	TANK 504 AIR PERMIT	NJOEP, DIV OF ENV QUALITY			G
3143-0032	TANK 505 AIR PERMIT	NJDEP, DIV OF ENV QUALITY			G

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EXXON PROPRIETARY EXXON U.S.A. PERMIT EXPIRATION REPORT PERMITS WITH LESS THAN 90 DAYS UNTIL EXPIRATION AS OF 10/10/91 FACILITY ID: BAYONNE

PERMIT NO	PERMIT NAME	AGENCY	DATE	EXPIRATION DATE	DAYS UNTIL	STATUS
3143-0033	TANK 506 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				
3143-0036	TANK 513 AIR PERMIT					G
3143-0037	Market Committee	NUDER, DIV OF ENV QUALITY				G
3143-0038	TANK 514 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
	TANK 516 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0039	TANK 1001 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143 0040	TANK 1002 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0041	TANK 1003 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0042	TANK 1004 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143 0043	TANK 1005 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0044	TANK 1006 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0045	TANK 1007 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143 0046	TANK 1008 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G 0-05
3143-0047	TANK 1009 AIR PERMIT	NJDEP, DIV OF ENV QUALITY	12/24/88	11/09/91	30	A TEMP CERT.
3143-0052	TANK 1014 AIR PERMIT	NJDEP. DIV OF ENV QUALITY	12/18/90	11/09/91	30	
3143-0053	TANK 1015 AIR PERMIT	NJDEP, DIV OF ENV QUALITY	CAL TALLES	11/09/91	30	A TEMP CERT
3143 0055	IANK 1017 AIR PERMIT	NJDEP, DIV OF ENV QUALITY	12/18/90	11/09/91	30	A themp cost
3143-0057	TANK 1024 AIR PERMIT	NJOEP. DIV OF ENV QUALITY	25136334			& DEMP CORT
3143-0058	TANK 1025 AIR PERMIT	NUDEP. DIV OF ENV QUALITY				G
3143-0064	TANK 1031 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0071	TANK 1046 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0073	TANK 1048 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0074	TANK 1088 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				6
3143-0075	TANK 1089 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
	TANK 1090 AIR PERMIT	NJDEP. DIV OF ENV QUALITY	09/19/88			Ĭ.
3143-0076		NUDEP, DIV OF ENV QUALITY	437 13704			G
3143-0080	TANK 1091 AIR PERMIT	NJDEP. DIV OF ENV QUALITY				G
3143-0081	TANK 1092 AIR PERMIT					Ğ
3143-0082	TANK 993 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-C083	TANK 576 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				Ğ
3143-0084	TANK 659 AIR PERMIT	NJOEP, DIV OF ENV QUALITY				G
3143-0087	TANK 1049 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0088	TANK 1051 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3143-0089	TANK 1100 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				_
3143-0090	TANK 1101 AIR PERMIT	NJDEP, DIV OF ENV QUALITY		20,100,101	1.01	G
3143-0157	1 DIONISIO - IRPL CERTIF	NYC FIRE DEPT - FIRE PREVENT	11/05/90	09/30/91	(10)	A
3143-0162	P J RICE - IRPL CERTIF	NYC FIRE DEPT - FIRE PREVENT	11/05/90	12/31/91	82	^
3146-0001	TANK-1 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3146-0002	TANK-2 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3146 0003	TANK-3 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3146-0004	TANK-4 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3146 0005	TANK-5 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
J146 0006	IANK-6 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				6
J146 U00/	IANK-7 AIR PERMIT	NJDEP, DIV OF ENV QUALITY				6
J140 0008	IANK-B AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G
3146 0009	TANK-9 AIR PERMIT	NIDEP, DIV OF ENV QUALITY				G
3146 0010	TANK-1U AIR PERMIT	NJDEP, DIV OF ENV QUALITY				G

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LI MALT NO	PERMIT_NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
MAP INE - 0077	H. DIAZ - BIC CERTIF	PER	US COAST GUARD	89/02/27	*********
Mar-18E-0078	L. CONLEY MCGOVERN -PIC CERT	PER	US COAST GUARD	89/02/27	
MARTHE 8079	J. CUNDENO - PIC CERTIF	PER	US COAST GUARD	89/02/27	
hr 111E - 0080	G. COLLINS - PIC CERTIF	PER	US COAST GUARD	89/02/27	
MARTHE - UOB I	U. CODY - PIC CERTIF	PER	US COAST GUARD	89/02/27	
Maid HE-0082	D. CARROLL - PIC CERTIF	PER	US COAST GUARD	89/02/27	
IndictRE-0083	E. CALLES - PIC CERTIF	PER	US COAST GUARD	89/02/27	
WHITE-0084	R. BROADBENT - PIC CERTIF	PER	US COAST GUARD	89/02/27	
MARTHE-0085	J. BOWERS - PIC CERTIF	PER	US COAST GUARD	89/02/27	
14 AVINE -0086	R. BITWINSKI - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1.1 1111E-0087	F. ALBIETZ - PIC CERTIF	PER	US COAST GUARD	89/02/27	
BB00-3411 mod	D. AHERN - PIC CERTIF	PER	US COAST GUARD	89/02/27	
W INE -0089	R. WUNDER- PIC CERTIF	PER	US COAST GUARD	89/02/27	
MANTHE - DIVIO	P. UNIS- PIC CERTIF	PER	US COAST GUARD	89/02/27	
1. WINE-0091	C. RHODES - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1. WINE-0092	P. SEALLS - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1 14E - 0093	R. QUINN - PIC CERTIF	PER	US COAST GUARD	89/02/27	
DESERVE - UD94	P. MUNDELL - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1 .HTHE = 0095	R. MILES - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1. WINE-0096	T, MAHON - PIC CERTIF	PEH	US COAST GUARD	89/02/27	
H-0114E-0097	F. LOURIDU - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1. KINE 0098	W. KERN - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1. WINE~0099	W. JONES - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1.1 .14 114E -0100	P. FOLEY - PIC CERTIF	PER	US COAST GUARD	89/02/27	
1HIHE-0101	J. DIDONATO - PIC CERTIF	PER	US COAST GUARD	89/02/27	
10 .12111E-0102	S. BASIRICO - PIC CERTIF	PER	US COAST GUARD	89/02/27	
14 WE NE-0103	T. BLEACH - PIC CERTIF	PER	US COAST GUARD	B9/02/27	
1. RINE 0104	J. BEANE - PIC CERTIF	PER	US COAST GUARD	89/02/27	
MAKINE-0105	J. BARES - PIC CERTIF	PER	US COAST GUARD	89/02/27	
11 WINE-0106	K. ARLINGTON - PIC CERTIF	PER	US COAST GUARD	89/02/27	
MARTHE -0107	MARINE RADIO LICENSE	OPER	FEDERAL COMMUNICATIONS COMM	86/10/31	91/10/31
10-14/HE-0108	PIER NO. 6 DOLPHIN NAV LIGHT	OPER	US DOT - USCG	73/01/01	99/99/99
W WITHE-0109	PIER NO. 6 EXTENSION	OPEN	NJDER - DIV OF COASTAL RES	90/04/15	95/04/15
1. WINE 0110	BOOM BOAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/01/01
1-0114E-0111	BOOM BOAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/07/01
WINE - 0112	BOOM DAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/01/01
11 HINE-0113	BOOM BUAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/02/01
1RINE-0114	BOOM BOAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/01/01
1.01H HE-0115	BOAT TRAILER REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		90/03/01
. < < U001	USTI REGISTRATION	TANK	NJDEP, DIV OF ENV QUALITY	90/02/01	91/01/31
* ** 0002	UST2 REGISTRATION	TANK	NJDEP, DIV OF ENV QUALITY	90/02/01	91/01/31
- 5 KA - 0003	V USTI AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	88/04/27	93/04/27
444 0004	UST2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
- 144 0005	BOILER 1 & 2 AND CHX STACK	AIR	NJDEP, DIV OF ENV QUALITY	86/03/17	91/02/16
- 744 0006	NJPDES DSW PERMIT	WATER	NJDEP, DIV OF WATER RESOURCES	90/08/01	95/07/31
444 0008	SARA III - 312 REPURT	REPRT	NJDEP, DIV OF ENV QUALITY	Se horner	91/03/15
44 00009	BOILER #1 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
. 6 - 0010	BOILER # AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
- C+ U011	ASPHALT FURNACE AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
4. 0012	HOT OIL HEATER AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
55 0013	UGST 1 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
0014	WELDING AND HOT WORK PERMIT	OPER	USCG - DEPT OF TRANSP	88/10/25	01/10/25

MIT_NO	PERMIT_NAME	PERMIT_TYPE	AGENCY		EXPIRE_DATE
. 0015	RADIO STATION LICENSE	OPER	FEDERAL COMMUNICATIONS COMM	87/09/11	92/09/11
0016	MARPUL HYDROCARBONS	OPER	US COAST GUARD	86/03/04	99/99/99
. 0017	MARPOL SOLVENTS	OPER	US COAST GUARD	87/04/06	99/99/99
. 0018	MARPOL CERTIFICATE	OPER	US COAST GUARD	89/08/18	99/99/99
· 10019	MAIN BLOG REFRIG COMPRESSORI	OPER	NJ DEPT OF LABOR	89/06/22	91/06/27
1 0020	MAIN BLOG REFRIG COMPRESSOR2	OPER	NJ DEPT OF LABOR	89/06/22	91/06/27
< 0021	FIRE ENGINE 1 REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
. 0022	FOAM TRUCK I REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
. 0073	DIESEL TRUCK REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
· JU24	PAYLOADER REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
1 0026	F J ALBIETZ WWTP LICENSE	PER	NJDEP, DIV OF ENV QUALITY		91/09/30
1 0027	R SCERBO WWTP LICENSE	PER	NJDEP. DIV OF ENV QUALITY	81/05/18	
1-0028	G DONOHUE GOLD SEAL BUILER	PER	NJDOL, MECH INSP BUREAU	83/06/01	93/05/31
< 0029	F ALBIETZ GOLD SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		91/06/30
4 -0030	E KAMINSKI RED SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		92/02/28
4 0031	R HUDNETT RED SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		93/01/31
0032	R LEON RED SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		93/06/30
. 0033	R DIAZ BLUE SEAL BOILER	PER	NJDOL . MECH INSP BUREAU		93/10/31
- 0034	D GOODSON BLUE SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		91/09/30
. 0035	B WALSH BLUE SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		93/06/30
• 0036	R HORN BLUE SEAL BOILER	PER	NJDOL, MECH INSP BUREAU NJDOL, MECH INSP BUREAU		90/02/28
0037	O COACHMAN BLUE SEAL BOILER VRU PERMIT	AIR	S: NJDEP. DIV OF ENV QUALITY	88/07/27	91/04/12
1 0001	TANK-1053 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY	88/03/18	93/03/18
0002	TANK-1054 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	00700710	20, 22, 10
- 0003	TANK 1055 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 9004	TANK 1056 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 9006	TANK 1057 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0007	TANK 1058 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
: 000H	TANK 1060 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0009	TANK 1061 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0010	TANK 1062 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0012	TANK 1063 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 11013	TANK 1064 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0014	TANK 1071 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1.0015	TANK 1072 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1-0016	TANK 1073 AIR PERMIT	AIR	NJOEP, DIV OF ENV QUALITY		05/09/10
1 0017	TANK 916 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		95/08/10
1-0018	TANK 917 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	07/06/06	95/08/17
1.0019	TANK 918 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/06/06 89/03/23	95/08/17 01 3/06
1-0020	TANK 919 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/12/24	81/02/12 91/05/04
1-0021	TANK 920 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/12/24	95/08/17
3 0022	TANK 921 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	00/12/24	337 007 11
1 0023	TANK 1065 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1-13024	TANK 1066 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1-0025	TANK 1067 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0026	TANK 1068 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1-0027	TANK 1070 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1 0028	TANK 501 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY		
	TANK 502 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
(0030	TANK 504 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		

VII NO	PEHMIT NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
1 0032	TANK 505 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY	-4070-220-6	
11.0033	TANK 506 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11:0034	TANK 507 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/09	93/03/09
11-0035	TANK SUB AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/03	93/03/09
11-0036	TANK 513 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	44,05,05	33703703
11-0037	TANK 514 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
1-0038	TANK 516 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1.0039	TANK 1001 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11.0040	TANK 1002 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1 0041	TANK 1003 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
11 0042	TANK 1004 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11 0043	TANK 1005 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-0044	TANK 1006 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11 0045	TANK 1007 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11-0046	TANK 1008 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		- 1-1
11 0047	TANK 1009 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/12/24	91/02/12 91/05/06/09/08/10 95/08/10 95/08/10
11 0048	TANK 1010 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	488/12/21	95/08/17
11 0049	TANK 1011 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		95/08/10
11 0050	TANK 1012 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/12/24	95/08/10
11-0051	TANK 1013 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	90/12/18	95/08/17 91/05/06
1 1 0052	TANK 1014 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	90/12/18	95/08/17 91/05/06 91/02/12 91/02/05 91/05/06 95/08/10 91/02/12 91/05/06
1 (.0053	TANK 1015 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		91/02/05 11/07/00
1 0054	TANK 1016 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		95/08/10 01/25/12/0
1 + 0055	TANK 1017 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	90/12/18	91/02/12 11/05/00
11 0056	TANK 1018 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	C	95/08/10
1 (0057	TANK 1024 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
0058	TANK 1025 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	20,000,000	the searchton.
0059	TANK 1026 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/30	93/03/30
11 0060	TANK 1027 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	e a 107 100	
1 4 0061	TANK 1028 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	81/04/06	96/04/06
1 0062	TANK 1029 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	89/03/20	94/03/20
1.1-0063	TANK 1030 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/03/15	92/03/15
1 0064	TANK 1031 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		*****
11 0065	TANK 1032 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/09/08	93/09/08
1 (-0)066	TANK 1033 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	187/03/15	92/03/15
11 0067	TANK 1034 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	86/03/15	96/03/15
11-0068	TANK 1035 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/03/15	92/03/15 92/03/15
1.1 0069	TANK 1036 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY	87/03/15 89/06/20	94/06/20
11 0070	TANK 1037 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	09/00/20	34/00/20
1 0071	TANK 1046 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/03/13	92/03/13
11-0072	TANK 1047 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	01703713	32703713
13-0073	TANK 1048 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY		
11-0074	TANK 1088 AIR PERMIT TANK 1089 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0075	TANK 1009 AIR PERMIT	AIR -	NJDEP. DIV OF ENV QUALITY	88/09/19	
11 0076	TANK 1093 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	89/07/20	94/07/20
1.1 0078	TANK 1094 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY		92/09/25
1 0079	TANK 1095 ALR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY	87/08/03	92/08/03
1 0079	TANK 1091 AIR PERMIT	AIH	NUDEP DIV OF ENV QUALITY	21,143,144	30,02020
11-0081	TANK 1092 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 0082	TANK 993 AIR PERMIT	AIR	NJDEP DIV OF ENV QUALITY		
11 11083	TANK 576 AIR PLAMIT	AIN	NJDEP DIV OF ENV QUALITY		
	Tour are our ranni	6.40	xener rate of ent denerity		

111.0084	TANK 659 AIR PERMIT		******		
		AIR	NJDEP, DIV OF ENV QUALITY		0102010000
	TANK 902 AIR PERMIT	AIR		00/00/10	00100110
.111 0086	TANK 903 AIR PERMIT	AIR	NJDEP DIV OF ENV QUALITY	88/03/18	93/03/18
1111 0087	TANK 1049 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY NUDEP, DIV OF ENV QUALITY	88/03/09	93/03/09
1111-0088	TANK 1051 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11.11.0089	TANK 1100 AIR PERMIT	AIR	NJOEP, DIV OF ENV QUALITY		
111 0090	TANK LIOI AIR PERMIT	AIR			
11.11 0091	TANK 1012 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	00/03/21	01100101
1111 0092	TANK 1015 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0093	TANK 1035 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
11-11 0094	TANK 1034 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31 88/03/31	91/03/31
11-11-0095	TANK 1026 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1111-0096	TANK 987 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
11-11-0097	TANK 1029 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	
113-0098	TANK 1030 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1115-0099	TANK 916 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
17 11:0100	TANK 918 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	
11-11 0101	TANK 919 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0102	TANK 920 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1111 0103	TANK 921 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111110104	TANK 1013 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0105	TANK 1014 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111-0106	TANK 1017 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
-11-0107	TANK 1016 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
8016 111	TANK 1028 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111-0109	TANK 1025 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
101 0110	TANK 1010 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0111	TANK 1027 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0112	TANK 1095 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0113	TANK 1094 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 2114	TANK 1047 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0115	TANK 1009 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
11 0116	TANK 1032 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
		PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/06/30
111-0150	M. J. PETRICK IRPL CERTIF S A DOHERTY - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/11/28
141:0152	K M DONOVAN - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/12/14
111 0153	VINCENT SMITH - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/06/30
141 0154	R G BITWINSKI - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/12/14
141.0155	J E OPEL - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/06/30
111 0157	I DIONISIO - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	91/09/30
	K J KIRBY - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/08/20
111-0158	R P DWORZANSKI - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/08/20
1.41 0159	R J DZBENSKI - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/08/20
141-0161	D K AHERN - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/11/28
	P J RICE - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	91/12/31
1.11-0162	TANK-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	22111122	51111213
1.46 -0001	TANK-Z AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140, 0002			NJDEP, DIV OF ENV QUALITY		
1141-0003	TANK-3 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140 0004	TANK-4 AIR PERMIT		NJDEP, DIV OF ENV QUALITY		
140 0005	TANK-5 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
111 0006	TANK-6 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11, 0007	TANK-7 AIR PERMIT	AIR	HOUSE, DIV OF ENV QUALITY		

5.

FERMIT NO	PERMIT_NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
110 0008	TANK-B AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
· 10. 0009	TANK-9 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1146 0010	TANK-10 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(146-0011	TANK-11 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1140 0012	TANK-12-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(146-0013	TANK-12-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
0146 0014	TANK-12-3 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(140-0015	TANK-13 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
:140 0016	TANK-14 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1146-0017	TANK-15 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
:140 0018	TANK-16 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(146-0019	TANK-17 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(14) 0020	TANK-18 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(146-0021	TANK-19 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(140.0022	TANK-20 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
:140-0023	TANK-21 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
0.46 00024	TANK-22 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14. 0025	TANK-23 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
€140 0026	TANK-24-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(146-0027	TANK-24-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(140-0 029	TANK-25 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/01	93/03/01
:146 0030	TANK-26 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/01	93/03/01
:146 0031	TANK-27 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140 0032	TANK-28 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140 0033	TANK-29 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1.16-0034	TANK-30 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1146 0035	TANK-31 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
14to 0036	IANK-32 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	_	
+ 10 - 0037	TANK-33 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/01	02/02/01
1.46 0038	TANK-35 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	28703701 28703701	93/03/01 93/03/01
14n 0039	TANK-36 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	₩ 8703701	93/03/01
146 0040	TANK-37 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
-146 ⊴0041	TANK-38 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
· 140 · 0042	TANK-39 AIR PERMIT	AIR .	NJDEP, DIV OF ENV QUALITY		
11.0043	TANK-40 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
- 140 0044	TANK-41 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY		
i 1 16 0045	TANK-43 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
(146-0046	TANK-44 AIR PERMIT	AIR AIR	NJDEP, DIV OF ENV QUALITY		
:146-0047	TANK-45 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1146 0048	TANK-46 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
146 0049	TANK-47 AIR PERMIT TANK-48 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
146 0050	TANK-49 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(146 0051	TANK-49 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
(14) 0052	TANK-50 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(146-0053 (146-0054	TANK-52 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
10 0055	TANK-53 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
10 0056	TANK-54 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0057	TANK-55 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
0058	TANK-56 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
10.0059	TANK-57 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1. 0060	TANK-58 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
5.500					

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ON_TIMBLE	PERMIT_NAME	PERMIT_TYPE	AGENCY
.140 0061	TANK-59 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
11-11-0062	TANK-60 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1110 0063	TANK-61 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
11-10-0064	TANK-63-1 AIR PEHMIT	AIR	NJDEP. DIV OF ENV QUALITY
1146 0065	TANK-63-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1146-0066	TANK-64-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1140 -0067	TANK-64-2 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1140 0068	TANK-65-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1146-0069	TANK-65-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
-140 0070	TANK-66-1 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
*1 10 - DO 7 1	TANK-66-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
140 0072	TANK-66 J AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
140 0073	TANK-70 AIR PERMIT	AIH	NJDEP, DIV OF ENV QUALITY
al In 0074	TANK-71 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1140 -0075	TANK-72-1 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
-111 0076	TANK-72-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1130 0077	TANK-72-3 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
-1-11,-0078	1ANK-79 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
140 00/9	TANK-BU AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
0800 1111	TANK-BI AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
140 0081	TANK-82 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
116 0082	TANK-83 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1111 0083	TANK-84 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
-140 0084	TANK-85 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
1111 0085	TANK-86 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
101-0086	TANK-87 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
110 0087	TANK-88 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
111 11088	TANK-89 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
110 0089	TANK-90 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1 10 0090	TANK-91 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY
: 10 0091	TANK-92 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1 10 0092	TANK-93 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
10 0093	TANK-94 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11 10 0094	TANK-95 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1.1. 0095	TANK-96 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1.11, 0096	TANK-97 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
110.0097	TANK-98 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
111-0098	TANK-99 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY
111 0099	TANK-101 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
111, 0100	TANK-102 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
130 0101	TANK-103 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
110 0102	TANK-104 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
i ba 0103	TANK-105 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
110 0104	TANK-105 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
. 6. 0105	TANK-107 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
(1) 0106	TANK-108 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
THE UTO?	TANK-109 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
14. 0108	TANK-IID AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
. 10. 0109	IANK-TIL AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY
111: 0110	TANK-112 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1.10-0111	TANK-113 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1 in U112	TANK-116 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY

88/03/01

93/03/01

ON_11M1 -	PERMIT_NAME	PERMIT_TYPE	AGENCY				
(ie vie	4944544614				Q.		
1110 0113	TANK-117 AIR PERMIT	AIR					QUALITY
3140 0114	TANK-118 AIR PERMIT	AIR					QUALITY
- 64a - 0115	TANK-119 AIR PERMIT	AIR					QUALITY
110, 0116	TANK 120 AIR PERMIT	AIR					QUALITY
11-40 -0117	TANK-121 AIR PERMIT	AIR					QUALITY
1110 0118	TANK-122 AIR PERMIT	AIR					QUALITY
140 0119	TANK-123 AIR PERMIT	AIR					QUALITY
11. 1120	TANK-124 AIR PERMIT	AIR				200	QUALITY
1 1. 0121	TANK-125 AIR PERMIT	AIR					QUALITY
1110 0122	TANK-126 AIR PERMIT	AIR					QUALITY
1140 0123	TANK-127 AIR PERMIT	AIR					QUALITY
11111 0124	TANK-128 AIR PERMIT	AIR					QUALITY
111. 0125	TANK-131-1 AIR PERMIT	AIR					QUALITY
11/0-0126	TANK-131-2 AIR PERMIT	AIR					QUALITY
11 10 0127	TANK-131-3 AIR PERMIT	AIR					QUALITY
1110 0128	TANK-132-1 AIR PERMIT	AIR					QUALITY
11 11 0129	TANK-132-2 AIR PERMIT	AIR					QUALITY
10. 0130	TANK-132-3 AIR PERMIT	AIR					QUALITY
1 10. 0131	TANK-133-1 AIR PERMIT	AIR					QUALITY
1 1 0132	TANK-133-2 AIR PERMIT	ALR					QUALITY
1 0133	TANK-133-3 AIR PERMIT	AIR					QUALITY
11. 0134	TANK-134-1 AIR PERMIT	AIR					QUALITY
1 0 0135	TANK-134-2 AIR PERMIT	AIR					QUALITY
: 1., 0136	TANK-135-1 AIR PERMIT	AIR					QUALITY
11. 0137	TANK-135-2 AIR PERMIT	AIR					QUALITY
11. 0138	TANK-136-1 AIR PERMIT	AIR					QUALITY
11. 0139	TANK-136-2 AIR PERMIT	AIR					QUALITY
1111 0140	TANK-137 AIR PERMIT	AIR					QUALITY
1 10 0141	TANK-138 AIR PERMIT	AIR					QUALITY
11. 0142	TANK-139 AIR PERMIT	AIR					QUALITY
11. 0143	TANK-140 AIR PERMIT	AIR					QUALITY
11 14 0144	TANK-141 AIR PERMIT	AIR					QUALITY
11 10 0145	TANK-142 AIR PERMIT	AIR					QUALITY
111110146	TANK-143 AIR PERMIT	AIR					QUALITY
1.10 -0147	TANK-144 AIR PERMIT	AIR					QUALITY
110-0148	TANK-145 AIR PERMIT	AIR					QUALITY
1111 0149	1ANK-146-1 AIR PERMIT	AIR					QUALITY
1110-0150	TANK-146-2 AIR PERMIT	AIR					QUALITY
1146-0151	TANK-146-3 AIR PERMIT	AIR					QUALITY
(146-0152	TANK-147-1 AIR PERMIT	AIR					QUALITY
1110-0153	TANK-147-2 AIR PERMIT	AIR	NJDEP,				QUALITY
1140-0154	TANK-147-3 AIR PERMIT	AIR					QUALITY
1140-0155	TANK-148-1 AIR PERMIT	AIR					QUALITY
1146 0156	TANK-148-2 AIR PERMIT	AIR	NJDEP,				QUALITY
11.46 -0157	TANK-148-3 AIR PERMIT	AIR	NJDEP,				QUALITY
11.10-0158	TANK-149-1 AIR PERMIT	AIR					QUALITY
1145-0159	TANK-149-2 AIR PERMIT	AIR	NJDEP,				QUALITY
1145-0160	TANK-150-1 AIR PERMIT	AIR					QUALITY
1116-0161	TANK-150-2 AIR PERMIT	AIR					QUALITY
(116-0162	TANK-151-1 AIR PERMIT	AIR	NUDEP,				QUALITY
11.46 .0163	TANK-151-2 AIR PERMIT	AIR	NJDEP,				QUALITY
:146-0164	TANK-153 AIR PERMIT	AIR	NJDEP.	OIV	OF	ENV	QUALITY

/ 1 4/ /_NO	PERMIT_NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
-1 m-0165	TANK-154 AIH PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		********
11 10 0166	TANK-155 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11.10-0167	TANK-156 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(1), 0168	TANK-157 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1110 0159	TANK-158 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1110 0170	TANK-159 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1-11. 0171	TANK-160 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-11-0172	TANK-161 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-11, 0173	TANK 170 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-m-11174	TANK-171 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1111, 0175	TANK-237 AIR PERMIT	AIR	NJOEP, DIV OF ENV QUALITY		
11-10 -0176	TANK-238 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(1-th-0177	TANK-402 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-10-0178	TANK-403 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 110179	TANK-404 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
FI 100-0180	TANK-405 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 11 0181	TANK-406 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 1. 0182	TANK-407 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY		
*140-0183	TANK-408 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111., 0184	TANK-410 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-10-0185	TANK-411 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 hr -0186	TANK-412 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 10 0187	TANK-413 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY		
11. 0188	TANK-414 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
.40 0189	TANK-415 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11000190	TANK-416 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0191	TANK-417 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 10 0192	TANK-448 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140-0193	TANK-547 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1.10 0194	TANK-548 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110.0195	TANK-550 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
1111 0196	TANK-553 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1111 0197	TANK-554 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1111 0198	TANK-556 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1110.0199	TANK-557 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
(1.10.0201	TANK-565 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11. 0202	TANK 569 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0203	TANK-571 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140 0204	TANK-572 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/09	93/03/09
140-0205	TANK-573 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88703709	93/03/09
110 0206	TANK-581 AIR PERMIT	AJR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY		
140-0207	TANK-582 AIR PERMIT	AIR			
1146-0208	TANK-583 AIR PERMIT TANK-584 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY		
11 in - 02 10	TANK-585 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140-0211	TANK-586 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1140 0212	TANK-588 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0213	TANK-591 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-10-0214	TANK-592 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0215	TANK-593 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY		
110 0216	TANK-594 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1146 0217	TANK-595 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
A P. C.	Charles and Arrange and Charles	210	Charles and the same seasons and		

ON_TIME IT	PERMIT_NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
11. 0218	TANK-596 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111110219	TANK-597 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11.1.1-0220	TANK-599 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1110 0221	TANK-617 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1110 0222	TANK-657 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1-10223	BATCH KETTLES 1-17	AIR	S: NJDEP, DIV OF ENV QUALITY		
117-0001	TANK-D-101 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
111/ 0002	TANK-DI AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
1147 - 0003	TANK-D5 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/ 0004	TANK-DE AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1147-0005	TANK-901 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY		
111/ 0006	TANK-904 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111/ 0/107	TANK-917 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1147 0008	TANK-927 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
141.0009	TANK-928 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
111/ 0010	TANK-929 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1147 0011	TANK-930 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
114/ 0012	TANK-931 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111/ 0013	TANK-932 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0014	TANK-933 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0015	TANK-934 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
114/ 0016	TANK-935 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111/ 0017	TANK-936 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1147 0018	TANK-941 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
:11/-0019	TANK-942 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0020	TANK-943 AIR PERMIT	ATR	NJDEP, DIV OF ENV QUALITY		
11/ 0021	TANK-947 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
114/ 0022	TANK-948 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 1)023	TANK-949 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
114/-0024	TANK-950 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0025	TANK-955 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
141-0026	TANK-956 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0027	TANK-959 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
-1-1/ 0028	TANK-960 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/-1029	TANK-961 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0030	TANK-962 AIR PERMIT	AIR:	NJDEP, DIV OF ENV QUALITY		
147-0031	TANK-963 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0032	TANK-964 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
147-0033	TANK-965 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11.1/ 0034	TANK-966 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
114/ 0035	TANK-967 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/-0036	TANK-968 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0037	TANK-969 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/-0038	TANK-970 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
117.0039	TANK-971 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/-0040	TANK-972 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/ 0041	TANK-973 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1147-0042	TANK-974 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111/ 0043	TANK-975 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	/	
14/ 10044	TANK-986 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	1	C2122144
1: 0045	TANK-987 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	V87/08/02	92/08/02
17 0046	TANK-990 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		

FILLIMIT_NAME	HUDSON REGIONAL HEALTH COMMISSION, 1991 RENEWALS AND FEES PERM COMMENT	RENEWAL_FEE	EXPIDE DATE
DRESE	5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	RENEWAL_FEE	EXPIRE_DATE
A MALT FURNACE AIR PERMIT	ASPHALI FURNACE EMISSIONS, 85 GAL/HR, CATEGORY II	\$500	
	BOILER #1 EMMISSIONS, 730 GAL/HR, CATEGORY II	\$500	
MILER #2 AIR PERMIT	BOILER #2 EMMISSIONS, 730 GAL/HR, CATEGORY II	\$500	96/03/31
IIII DIL HEATER AIR PERMIT	HOT OIL HEATER CHEM PLANT, 20 GAL/HR, CATEGORY II	20,000	96/03/31
RI I TRATION-HAZ. WASTE GEN.		\$5,000	96/01/01
WHITE - HAZ. WASTE GEN.	IN COMPLIANCE WITH SECT. B. OF HAZ SUBST CONTROL CD, HRHC		92/01/01
INHE G-2 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS	\$350	96/03/31
INH 1009 AIR PERMIT	AVGAS 100		96/03/31
TANK 1010 AIR PERMIT	TOLULENE	\$350	
IANK 1012 AIR PERMIT	ALLOWED CONTENTS HEPTANE LT NAPTHA, HVV NAPTHA, HEXANE, HEPTANE, CUTBACK NAPTHA & KERO LT NAP, HVV NAP, KERO & DSL ALLOWED CONTENTS HEPTANE ALLOWED CONTENTS: CUTBACK NAPTHA CONTENTS:LT.NAP, HVV.NAP, AVGAS, TOLULENE, MOGAS, KERO	\$350	
IANA 1013 AIR PERMIT	LT NAPTHA, HVY NAPTHA, HEXANE, HEPTANE, CUTBACK NAPTHA & KERO	\$350	96/03/31
TARK TOTA ATR PERMIT	LT NAP, HOY NAP. KERO & DSL	\$350	96/03/31
IANA 1015 AIR PERMIT	ALLOWED CONTENTS HEPTANE	\$350	
IANK 1016 AIR PERMIT	ALLOWED CONTENTS: CUTBACK NAPTHA	\$350	
TANK 1017 AIR PERMIT	CONTENTS: L1: NAP. HVY. NAP. AVGAS, TOLULENE, MOGAS, KERO	\$350	96/03/31
TATIL 1025 AIR PERMIT	AVLENE	\$350	96/03/31
TANK 1026 AIR PERMIT	ACCORD CONTENTS VANSOE	\$350	
TANK 1027 AIR PERMIT	ALLOWED CONTENTS VARSOL 18	\$350	
TANK TOZH ATR PERMIT	AROMATIC 100		96/03/31
IANY 1029 AIR PERMIT	ALLOWED CONTENTS VARSOL 18		96/03/31
INUK 1030 AIR PERMIT	LOPS	\$350	96/03/31
TATIR 1032 AIR PERMIT	NORPAR 15	****	91/03/31
IANK 1034 AIR PERMIT	ALLOWED CONTENTS 2429 NAPTHA		96/03/31
TANK 1035 ATR PERMIT	ALLOWED CONTENTS NORPAR 12		96/03/31
TANK 1047 AIR PERMIT	ISOPAR G		96/03/31
TARE 1090 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS	\$350	96/03/31
TARK 1093 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS		96/03/31
TANK TOSA AIR PERMIT	I SOPAR E		96/03/31
THE TOPS AIR PERMIT	I SOPAR C	\$350	96/03/31
IANE 715 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS ALLOWED CONTENTS MIXED SOLVENTS	\$350	96/03/31
160 716 AIR PERMIT		3330	30/03/31
INTELLIGIES AND PERMIT	TANK HAS BEEN DEMOLISHED	\$350	96/03/31
IANA /25 AIR PERMIT	ALLOWED CONTENTS CYCLO HEXANE & VINYL ACETATE DOES NOT STORE A VOS ALLOWED CONTENTS AROMATIC NAPTHA	2000	34,03,21
IANE 734 AIR PERMIT	ALLOWED CONTENTS AROMATIC NAPTHA	\$350	96/03/31
IANK /36 AIR PERMIT	NO LONGER STORES VOS	2000	50,05,01
	DOES NOT STORE A VOS DELETE		
IANK 738 AIR PERMIT	NOT A VOS		
IANK 916 AIR PERMIT	ALLOWED CONTENTS LT NAPTHA, HVY NAPTHA, MOGAS	\$350	96/03/31
IANK 918 AIR PERMIT	ALLOWED CONTENTS LT NAPTHA, HEAVY NAPTHA, MOGAS		96/03/31
IAME 919 AIR PERMIT	ALLOWED CONTENTS LT. NAPTHA, HEAVY NAPTHA, MOGAS	\$350	
IAIM 920 AIR PERMIT	ALLOWED CONTENTS LT NAPTHA, HEAVY NAPTHA, MOGAS	\$350	96/03/31
IANK 921 AIR PERMIT	ALLOWED CONTENTS LTNAPTHA, HVY NAPTHA, MOGAS	\$350	96/03/31
IANK 927 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
TANK 928 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
TANK 929 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
IANK 930 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
IANIE 931 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
IAMP 932 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
TANK 932 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	
IANK 933 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	
ININ 933 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
THUR SOM ATH FERMIT	precine contents not do the present national	- 77.7	of services and

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TO WALL NAME	PERM_COMMENT	RENEWAL_FEE	EXPIRE_DATE
	All dura court as as as are as surely as	****	06/00/01
TAHE 935 AIR PERMIT	ALLOWED CONTENTS RC, QD, AND MC CUTBACK ASPHALTS	2000	96/03/31
TANK 936 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
TAUK 937 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
IANK 938 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
IANE 941 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
IANA 942 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
TANK 943 AIR PERMIT	ALLOWED CONTENTS RC. OD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
TANK 987 AIR PERMIT	ALLOWED CONTENTS VARSOL 18	\$350	95/03/31
ILIST I AIR PERMIT	UGST 1 . CONTENTS MOTOR GASOLINE	\$250	96/03/31

5 - 5	4					
.4	. I_NO	PERMIT_NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
16.03	0001	TANK THE ALC OCCURS				*****
	1002	TANK 725 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	9003	TANK 715 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	1004	TANK 736 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	0005	TANK 744,745,746 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	0006	TANK 735 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	0007	TANK 738 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	0008	TANK 734 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
· · · · · · · · · · · · · · · · · · ·		TANK 716 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	1E-0002	J. WROBLEWSKI - PIC CERTIF	PER	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
	1E-0003	J. WOERNER - PIC CERTIF	PER	US COAST GUARD - TITLE 33	89/02/27	
	E 0004	N. WILLIAMSON - PIC CERTIF	PER	US COAST GUARD - TITLE 33	89/02/27	
	#-0005	R. WICKERSTY - PIC CERTIF	PER	US COAST GUARD - TITLE 33 US COAST GUARD - TITLE 33	89/02/27	
	1E-0006	R. VIOLA - PIC CERTIF	PER	US COAST GUARD - TITLE 33	89/02/27 89/02/27	
	1E-0007	J. VIOLA - PIC CERTIF	PER	US COAST GUARD - TITLE 33	89/02/27	
	HE-DUOB	C. TAYLOR - PIC CERTIF	PER	US COAST GUARD - TITLE 33	89/02/27	
	E-0009	N. SPIERS - PIC CERTIF	PER	US COAST GUARD - TITLE 33	89/02/27	
	E-0010	V. SMITH - PIC CERTIF	PER	US COAST GUARD - TITLE 33	89/02/27	
	E-0011	W. SEXTON, JR PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0012	J. SCHUMANN - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0013	R. SCERBO - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0014	P. RICE - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E 0015	M. PETRICK - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0016	M. O'ROURKE- PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E 0017	R. ORLOWSKI - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0018	J. OPLL - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0019	B. MORGAN - PIC CERTIF	PER	US COAST GUARD	89/02/27	
Linketh	E-0020	D. MILLER - PIC CERTIF	PER	US COAST GUARD	89/02/27	
tratella	E 0053	S. LOWREY - PIC CERTIF	PER	US COAST GUARD	89/02/27	
think ! is	E-0054	W. LEE - PIC CERIIF	PER	US COAST GUARD	89/02/27	
Walte	C 0055	A. LACA - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0056	C. KISCH - PIC CERTIF	PER	US COAST GUARD	89/02/27	
TAXMEN	E-0057	G. KILEY - PIC CERTIF	PER	US COAST GUARD	89/02/27	
marchia	E-0058	J. JONES - PIC CERTIF	PER	US COAST GUARD	89/02/27	
fa \10 1 to	E-0059	R. ISBRECHT - PIC CERTIF	PER	US COAST GUARD	89/02/27	
14 411 14	E-0060	R. HUDNETT - PIC CERTIF	PER	US COAST GUARD	89/02/27	
LOWELN	E-0061	W. HUBENY - PIC CERTIF	PER	US COAST GUARD	89/02/27	
MISHORIN	E-0062	R. HORN - PIC CERTIF	PER	US COAST GUARD	89/02/27	
MARTH	E-0063	R. HAY - PIC CERTIF	PEH	US COAST GUARD	89/02/27	
MARCIN	E-0064	R. HARKNESS - PIC CERTIF	PER	US COAST GUARD	89/02/27	
LINE IN	E-0065	1. GENDZWELL - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0066	C. GALLAGHER - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0067	P. FOLEY - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0068	E. FERNANDEZ - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0069	R. DZBENSKI - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0070	R. DWORZANSKI - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	L 0071	K. DONOVAN - PIC CENTIF	PER	US COAST GUARD	89/02/27 89/02/27	
	E-0072	G. DONOHUE - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	E-0073	S. DOHERTY - PIC CERTIF	PER	US COAST GUARD US COAST GUARD	89/02/27	
	E-00/4	1. DIONISIO - PIC CERTIF	PER	US COAST GUARD	89/02/27	
	IE -0075	D. DIMASIBA - PIC CERTIF		US COAST GUARD	89/02/27	
Profess of	F-0076	D. DIETRICH - PIC CENTIF	PEH	OS CONST GONNO	Dar GLF 27	

	TI MALT_NO	PERMIT_NAME	PERMIT_TYPE			EXPIRE_DATE	
	114:1NE-0077	H. DIAZ - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	M-111E-0078	L. CONLEY-MCGOVERN -PIC CERT		US COAST GUARD	89/02/27		
	HANTHE BO79	J. CURDERO - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	14 - CTHE-0080	G. COLLINS - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	MARTHE-0081	U. CUDY - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	MILLETNE-0082	D. CARROLL - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	MARCHE-0083	E. CALLES - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	WHITNE-0084	R. BROADBENT - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	MARCHINE-0085	J. BOWERS - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	Way 1 NE-0086	R. BITWINSKI - PIC CERTIF	PER		89/02/27		
	MARTHE-0087	F. ALBIETZ - PIC CERTIF		US COAST GUARD	89/02/27		
	B800-3415	D. AHERN - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	W . #: 1 NE - 0089	R. WUNDER- PIC CERTIF	PER	US COAST GUARD	89/02/27		
	MARTINE-OTTOR	P. UNIS- PIC CERTIF	PER	US COAST GUARD	89/02/27		
	LARINE-0091	C. RHODES - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	6 INTHE-0092	P. SEALLS - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	D 219E-0093	R. QUINN - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	W . KTHE-0094	P. MUNDELL - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	1. RINE-0095	R. MILES - PIC CERTIF	PER		89/02/27		
	1. IKTHE-0096	T. MAHON - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	11-18 LINE-0097	F. LOURIDO - PIC CERTIF	PER		89/02/27		
	1. 31111E- 0098	W. KERN - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	10 VILLE-0099	W. JONES - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	11 11 1HE-0100	P. FOLEY - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	1. WINE-0101	J. DIDONATO - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	W	S. BASIRICO - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	MINE-0103	T. BLEACH - PIC CERTIF	PEH	US COAST GUARD	89/02/27		
	MARINE-0104	J. BEANE - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	1.0.1014E-0105	J. BARES - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	11.HINE-0106	K. ARLINGTON - PIC CERTIF	PER	US COAST GUARD	89/02/27		
	1. vit IAE - 0107	MARINE RADIO LICENSE	OPER	FEDERAL COMMUNICATIONS COMM	86/10/31	91/10/31	
	11-1614E-0108	PIER NO. 6 DOLPHIN NAV LIGHT		US DOT - USCG	73/01/01	99/99/99	
	14 4K NE-0109	PIER NO. 6 EXTENSION	OPER	NUDER - DIV OF COASTAL RES	90/04/15	95/04/15	
	LANCTUE-DITO	BOOM BOAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES	44,400,000	91/01/01	
	LARINE-0111	BOOM BOAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/07/01	
	WHITE-0112	BOOM JAI REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/01/01	
	1. KINE-0113	BOOM BUAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/02/01	
	IRIHE-0114	BOOM BOAT REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		91/01/01	
	LINKINE-0115	BOAT TRAILER REGISTRATION	BOAT	NJ DIV OF MOTOR VEHICLES		90/03/01	
	- 44 0001	USTI REGISTRATION	TANK	NJDEP, DIV OF ENV QUALITY	90/02/01	91/01/31	
	- 44 0002	UST2 REGISTRATION	TANK	NUDEP. DIV OF ENV QUALITY	90/02/01	91/01/31	
	· \ \ \ -0003	USTI AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	88/04/27	93/04/27	
	- 44 0004	UST2 AIR PERMIT	AIR	NJOEP. DIV OF ENV QUALITY	241.41	44.4.0	
	- 444 -0005	BOILER I & Z AND CHX STACK	AIR	NJDEP. DIV OF ENV QUALITY	86/03/17	91/02/16	
	- 44× 0006	NJPDES DSW PERMIT	WATER	NJDEP, DIV OF WATER RESOURCES	90/08/01	95/07/31	
	KK 0008	SARA 111 - 312 REPORT	REPRT	NJDEP. DIV OF ENV QUALITY	24,04.4	91/03/15	
	- : (+ 0009	BOILER #1 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31	
	44 · 0010	BOILER # AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31	
	K. 0011	ASPHALT FURNACE AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31	
	34 0012	HOT OIL HEATER AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31	
	- 35-0013	UGST 1 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31	
	* CC 0014	WELDING AND HOT WORK PERMIT	OPER	USCG - DEPT OF TRANSP	88/10/25	91/10/25	
	AND AMOUNT	HEADING AND HOL MORN TERMIT	WE WIT	AND THE PROPERTY OF THE PARTY O	201.20	44504044	

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TALT_NO	PERMIT NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
0015	RADIO STATION LICENSE	OPER	FEDERAL COMMUNICATIONS COMM	87/09/11	92/09/11
0016	MARPOL HYDROCARBONS	OPER	US COAST GUARD	86/03/04	99/99/99
0017	MARPOL SOLVENTS	OPER	US COAST GUARD	87/04/06	99/99/99
0018	MARPOL CERTIFICATE	OPEH	US COAST GUARD	89/08/18	99/99/99
4.1.0019	MAIN BLDG REFRIG COMPRESSORT	OPER	NJ DEPT OF LABOR	89/06/22	91/06/27
0020	MAIN BLDG REFRIG COMPRESSOR2	OPER	NJ DEPT OF LABOR	89/06/22	91/06/27
	FIRE ENGINE I REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
. 0022	FOAM TRUCK I REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
· · · · · · · · · · · · · · · · · · ·	DIESEL TRUCK REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
·-· JU24	PAYLOADER REGISTRATION	VEH	NJ DIV OF MOTOR VEHICLES	90/03/01	91/03/01
0026	F J ALBIETZ WWTP LICENSE	PER	NJDEP, DIV OF ENV QUALITY	ACSCE TO	91/09/30
3 0027	R SCERBO WWTP LICENSE	PER	NJDEP, DIV OF ENV QUALITY	81/05/18	
0028	G DONOHUE GOLD SEAL BOILER	PER	NJDOL, MECH INSP BUREAU	83/06/01	93/05/31
444 0029	F ALBIETZ GOLD SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		91/06/30
0030	E KAMINSKI RED SEAL BOILER	PER	NJOOL, MECH INSP BUREAU		92/02/28
< 1 € - 0031	R HUDNETT RED SEAL BOILER	PER	NJDOL. MECH INSP BUREAU		93/01/31
0032	R LEON RED SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		93/06/30
0033	R DIAZ BLUE SEAL BOILER	PER	NJOOL, MECH INSP BUREAU		93/10/31
0034	D GOODSON BLUE SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		91/09/30
··· · · · · · · · · · · · · · · · · ·	B WALSH BLUE SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		93/06/30
0036	R HORN BLUE SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		91/11/30
0037	O COACHMAN BLUE SEAL BOILER	PER	NJDOL, MECH INSP BUREAU		90/02/28
0038	VRU PERMIT	AIR	S: NJDEP, DIV OF ENV QUALITY	88/07/27	91/04/12
111-0001	TANK-1053 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY	88/03/18	93/03/18
111 0002	TANK-1054 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11.0003	TANK 1055 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11 0004	TANK 1056 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11 0006	TANK 1057 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11.0007	TANK 1058 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
1 1 0008	TANK 1060 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY		
11 0009	TANK 1061 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 0010	TANK 1062 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11-0012	TANK 1063 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11 0013	TANK 1064 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 0014	TANK 1071 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11:0015	TANK 1072 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-0016	TANK 1073 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY		35 104 105
1: 0017	TANK 916 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		95/08/10
41-0018	TANK 917 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	520 555 5450	10122013
13-0019	TANK 918 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/06/06	95/08/17
11 0020	TANK 919 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	89/03/23	95/08/17 0.126/00
11.0021	TANK 920 AIH PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	88/12/24	B1/02/12 91/05/00
13 0022	TANK 921 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/12/24	95/08/17
11.0023	TANK 1065 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
41 0024	TANK 1066 AIR PERMIT	AIR	NUDER. DIV OF ENV QUALITY		
41.0025	TANK 1067 AIR DERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11.0026	TANK 1068 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
41-0027	TANK 1069 AIR PERMIT	AIR	NJOEP, DIV OF ENV QUALITY		
41 0028	TANK 1070 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
41 0029	TANK 501 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 0030	TANK 502 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 0031	TANK SO4 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		

- LANT_NO	PERMIT_NAME	PERMIT_TYPE	AGENCY	1SSUED_DATE	EXPIRE_DATE
111 0032	TANK 505 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	102000000000	
-111.0033	TANK 506 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111 0034	TANK 507 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/09	93/03/09
-111-0035	TANK 508 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/03	93/03/09
111-0036	TANK 513 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	00/00/03	33703703
111-0037	TANK 514 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1111-0038	TANK 516 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111-0039	TANK 1001 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(111-0040	TANK 1002 AIR PERMIT	AIR	NJOEP, DIV OF ENV QUALITY		
111 0041	TANK 1003 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
141-0042	TANK 1004 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111 0043	TANK 1005 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-11-0044	TANK 1006 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
111 0045	TANK 1007 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-11-0046	TANK TOUR AIR PERMIT	AIH	NJDEP, DIV OF ENV QUALITY		
1141 0047	TANK 1009 AIR PERMIT			88/12/24	21/12/12 91/15h/2
111 0048		AIR	NJDEP, DIV OF ENV QUALITY		95/08/10 95/08/10 95/08/10
111.0049	TANK 1010 AIR PERMIT TANK 1011 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	48/12/21	05/00/1/
111 0050	TANK 1012 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	00/12/24	95/08/10
1141-0051	TANK 1013 AIR PERMIT	AIR		88/12/24	95/08/10
			NJDEP, DIV OF ENV QUALITY	90/12/18	95/08/17 91/05/0 P 91/02/05 01/05/00 95/08/10 91/05/00
111 0052	TANK 1014 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	90/12/18	ON 100 105 PM
111-0053	TANK 1015 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY		91/02/08
111 0054	TANK 1016 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	00110110	95/08/10 91/05/0/0
111 0055	TANK 1017 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	90/12/48	31702712 11/05/50
111.0056	TANK TOTE ATE PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		95/08/10
111 0057	TANK 1024 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111 0058	TANK 1025 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	44.144.44	20.00.100
111 0059	TANK 1026 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/30	93/03/30
111 0060	TANK 1027 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	42.72.7.72.3	25025322V
1141 0061	TANK 1028 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	81/04/06	96/04/06
111.0062	TANK 1029 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	89/03/20	94/03/20
1.1.1-0063	TANK 1030 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/03/15	92/03/15
111 0064	TANK 1031 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	100 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A	2012/05/05
141 0065	TANK 1032 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/09/08	93/09/08
141-0066	TANK 1033 AIR PERMIT	AIR	NJOEP. DIV OF ENV QUALITY	W87/03/15	92/03/15
1111 0067	TANK 1034 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	86/03/15	96/03/15
141-0068	TANK 1035 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/03/15	92/03/15
14.1-0069	TANK 1036 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	87/03/15	92/03/15
141 0070	TANK 1037 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY	89/06/20	94/06/20
141 0071	TANK 1046 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
:141-0072	TANK 1047 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/03/13	92/03/13
111 0073	TANK 1048 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
4111-0074	TANK TUBE AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
111 0075	TANK 1089 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
111 0076	TANK 1090 AIR PERMIT	AIR -	NJDEP. DIV OF ENV QUALITY	88/09/19	
111 0027	TANK 1093 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	89/07/20	94/07/20
111 0078	TANK 1094 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		92/09/25
111 0079	TANK 1095 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	87/08/03	92/08/03
11 0080	TANK 1091 AIR PERMIT	AIR	NJDEP DIV OF ENV QUALITY		ALL ALL PROPERTY.
11 0081	TANK 1092 AIR PERMIT	AIR	NJDEP DIV OF ENV QUALITY		
11 0082	TANK 993 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 0083	TANK 576 AIR PLAMIT	AIR	NJOEP DIV OF ENV QUALITY		
TI HUNG	Line and with training	0.40	nager that an ent agreet		

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1 1(1, NO	HERMIT_NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
111 0084	TANK 659 AIH PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	*********	
111 0085	TANK 902 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	88/03/18	02/02/10
111 0086	TANK 903 AIR PERMIT	AIR	NJDEP DIV OF ENV QUALITY	88/03/09	93/03/18
111 0087	TANK 1049 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88703703	33/03/09
1111 0088	TANK 1051 AIR PERMIT	AIR	NJDEP DIV OF ENV QUALITY		
1111 0089	TANK 1100 AIR PERMIT	AIR	NJDEP DIV OF ENV QUALITY		
111 - 0090	TANK 1101 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11 1 1 10091	TANK 1012 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0092	TANK 1015 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1141-0093	TANK 1035 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1111 0094	TANK 1034 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
11-11-0095	TANK 1026 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1111-0096	TANK 987 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1111-0097	TANK 1029 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0098	TANK 1030 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111-0099	TANK 916 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
0010-111	TANK 918 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
11.11 0101	TANK 919 AIR PERMIT	A I.R	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1111 0102	TANK 920 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0103	TANK 921 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
1111-0104	TANK 1013 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0105	THE TOTA AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111-0106	TANK 1017 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
. (1 0107	TANK 1016 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
.11 0108	TANK 1028 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111-0109	TANK 1025 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0110	TANK TOTO ALR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0111	TANK 1027 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0112	TANK 1095 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0113	TANK 1094 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0114	TANK 1047 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31	91/03/31
111 0115	TANK 1009 AIR PERMIT	AIR	HUDSON REGIONAL HEALTH COMM	88/03/31 88/03/31	91/03/31
111 0116	TANK 1032 AIR PERMIT	AIR	NVC FIRE DEPT - FIRE PREVENT	90/11/05	93/06/30
111 0150	M. J. PETRICK IRPL CERTIF	PER PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/11/28
111.0151	S A DOMERTY - IRPL CERTIF K M DONOVAN - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/12/14
141-0152	VINCENT SMITH - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/06/30
111 0153	R G BITWINSKI - IRPL CERTIF	PER	NVC FIRE DEPT - FIRE PREVENT	90/11/05	93/12/14
11-0155	J E OPEL - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/06/30
111 0157	I DIONISIO - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	91/09/30
111 0158	K J KIRBY - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/08/20
141 0159	R P DWORZANSKI - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	93/08/20
111 0160	R J DZBENSKI - IRPL CERTIF	PER	NVC FIRE DEPT - FIRE PREVENT	90/11/05	93/08/20
111-0161	D K AHERN - IRPL CERTIF	PER	NVC FIRE DEPT - FIRE PREVENT	90/11/05	93/11/28
1-11-0162	P J RICE - IRPL CERTIF	PER	NYC FIRE DEPT - FIRE PREVENT	90/11/05	91/12/31
1110-0001	TANK-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	S. 10 10 10 10 10 10 10 10 10 10 10 10 10	0.0000000000000000000000000000000000000
1111 0002	TANK-2 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1140 0003	TANK-3 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111 0004	TANK-4 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
110 0005	TANK-5 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
111-0006	TANK-6 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
111 0007	TANK-7 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		

EXEMPT NO	PERMIT_NAME	PERMIT_TYPE	AGENCY		EXPIRE_DATE
10.0008	TANK-B AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1. 0009	TANK-9 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
0010	TANK-10 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
21 by 0011	TANK-II AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1140 0012	TANK-12-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(14),-9013	TANK-12-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1146 0014	TANK-12-3 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1140-0015	TANK-13 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1110 0016	TANK-14 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
. 1.40 -0011	TANK-15 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11. 0018	TANK-16 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1140-0019	TANK-17 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
:1111 0020	TANK-18 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1140 0021	TANK-19 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11-111 0022	TANK-20 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140 0023	TANK-ZI AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1) 11: 1)024	TANK-22 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY		
1-11 0025	TANK-23 AIR PERMIT TANK-24-1 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11. 0026	TANK-24-2 AIR PERMIT	AIR	NJOEP, DIV OF ENV QUALITY		
) lab 0029	TANK-25 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	88/03/01	93/03/01
110 0030	TANK-26 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY	88/03/01	93/03/01
-140-0031	TANK-27 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY		2202202
141 0032	TANK-28 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
140 0033	TANK-29 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY		
16 0034	TANK-30 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
31.40 0035	TANK-31 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
-11. 0036	IANK-32 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
110 0037	TANK-33 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		122/12/2020
1111 11038	TANK-35 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	88/03/01	93/03/01
111 0039	1ANK-36 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	₩8703/01	93/03/01
11. 0040	TANK-37 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
140 0041	TANK -38 ATH PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0042	TANK-39 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1 0043	TANK-40 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1411 11044	TANK-41 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1411 0045	TANK-43 AIR PERMIT TANK-44 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1111 0046	TANK-45 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY		
1111 0048	TANK-46 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1-111-0049	TANK-47 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0050	TANK-48 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1110 0051	TANK-49 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
1111 0052	TANK-50 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
.1 10 0053	TANK-51 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11 10 0054	TANK-52 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY		
10 0055	TANK-53 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY		
10 0056	TANK-54 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
1 10 0057	TANK-55 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11, 0058	TANK-56 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11. 11059	TANK-5/ AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1. 13060	TANK-58 AIR PERMIT	AIR	NUDER. DIV OF ENV QUALITY		

I COMIT_NO	PERMIT_NAME	PERMIT_TYPE	AGENCY
140 0061	TANK ED ATE DEDUCT		WARE BAY WE WANT AND AND
11-10-0062	TANK-59 AIR PERMIT TANK-60 AIR PERMIT	AIR	HUDEP, DIV OF ENV QUALITY
(11) 0063	TANK-61 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY
11-10 0064	TANK-63-1 AIR PERMIT		NUDEP, DIV OF ENV QUALITY
1146 0065	TANK-63-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11-16-0066	TANK-64-1 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
1146 -0067	TANK-64-2 AIR PERMIT	12000000	NUDEP. DIV OF ENV QUALITY
114u-006B	TANK-65-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
114h-0069	TANK-65-2 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY
.1.11, 9070	TANK-66-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
110.0071	TANK-66-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY
1411 0072	TANK-66 J AIR PERMIT	AIR	
1.10 2073	TANK-70 AIR PERMIT	AIN	NJDEP, DIV OF ENV QUALITY
1.10 0074	TANK-71 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY
1140 -0075	TANK-72-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1110 0076	TANK-72-2 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1111 0077	TANK-72-3 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
140-0078	IANK-79 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
140 00/9	TANK-BU AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1111 0080	TANK-BI AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
140 0081	TANK-82 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1-11 0082	TANK-83 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
-1. 0083	TANK-84 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
10-0084	TANK-85 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
110 0085	TANK-BG AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
-1u 0086	TANK-87 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY
11. 0087	TANK-88 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11. 11088	TANK-89 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11. 0089	TANK-90 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1 11090	TANK-91 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
11, 0091	TANK-92 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
11. 0092	TANK-93 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
111-0093	TANK-94 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11 11 10094	TANK-95 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1-11, 0095	TANK-96 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
140 0096	TANK-97 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
111. 0097	TANK-98 AIR PERMIT	AIR	NUDER. DIV OF ENV QUALITY
111 0098	TANK-99 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
10 0099	TANK-101 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
114 0100	TANK-102 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
. the 0101	TANK-103 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1-14 0102	TANK-104 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
16. 0103	TANK-105 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
11 10 10104	TANK-106 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY
. 6, 0105	TANK-107 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1 (11 1) 106	TANK-108 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
11. 0107	TANK-109 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1 10 0108	TANK-110 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11, 0109	TANK-111 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1110110	TANK-112 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
100 0111	TANK-113 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1111 0112	TANK-116 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
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DN_1 INN	PERMIT_NAME	PERMIT_TYPE	AGENCY
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at his 0113	TANK-117 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11111 0114	TANK-118 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
140 0115	TANK-119 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1111 0116	TANK-120 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11-tu-0117	TANK-121 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1114 0118	TANK-122 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
14. 01119	TANK-123 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
111- 1120	TANK-124 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11. 0121	TANK-125 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1110 0122	TANK-126 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
11 10 0123	TANK-127 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11-10 0124	TANK-128 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1110 0125	TANK-131-1 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY
11/11/-0126	TANK-131-2 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
111. 0127	TANK-131-3 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
110 0128	TANK-132-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
111, 0129	TANK-132-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
111 0130	TANK-132-3 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
110131	TANK-133-1 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
10. 0132	TANK-133-2 AIR PERMIT	AIR	
1 10 0133	TANK-133-3 AIR PERMIT		NJDEP, DIV OF ENV QUALITY
1 h. 0134	TANK-134-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1 10 0135	TANK-134-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11. 0136	TANK-135-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11 0137	TANK-135-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11. 0138	TANK-136-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1. 0139	TANK-136-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
111 0140	TANK-137 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1 to 0141	TANK-138 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
111. 11142	TANK-139 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1 h. 0143	TANK-140 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11. 1144	TANK-141 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
.110.0145	TANK-142 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
11.00146	TANK-143 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY
110-0147	TANK-144 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1111-0148	TANK-145 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
110 0149	TANK-146-1 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY
110-0150	TANK-146-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11-10-0151	TANK-146-3 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1110 0152	TANK-147-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11 14-0153	TANK-147-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11/11/-0154	TANK-147-3 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1111-0155	TANK-148-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
:100-0156	TANK-148-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
11111-0157	TANK-148-3 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
1110 0158	TANK-149-1 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
111.1.0159	TANK-149-2 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
:140-0160	TANK-150-1 AIR PERMIT	AIR	NUDER, DIV OF ENV QUALITY
1110 0161	TANK-150-2 AIR PERMIT	AIR	NUDEP. DIV OF ENV QUALITY
1110-0162	TANK-151-1 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
1.10-0163	TANK-151-2 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY
146 0164	TANK-153 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY
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OH_1 1 M	PERMIT_NAME	PERMIT_TYPE	AGENCY	ISSUED_DATE	EXPIRE_DATE
1 14 0218	TANK-596 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	TOTOTOTOTO,	,-0202020202
114-0219	TANK-597 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1-10220	TANK-599 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0221	TANK-617 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110 0222	TANK-657 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
110-0223	BATCH KETTLES 1-17	AIR	S: NJDEP, DIV OF ENV QUALITY		
11/ 0001	TANK-D-101 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
147-9003	TANK-DI AIR PERMIT TANK-D5 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/-0004	TANK-DE AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY		
147-0005	TANK-901 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0006	TANK-904 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
147 0007	TANK-917 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0008	TANK-927 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
147 0009	TANK-928 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0010	TANK-929 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
(47 001)	TANK-930 AIR PERMIT	ALR	NJDEP, DIV OF ENV QUALITY		
14/ 0012	TANK-931 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0013	TANK 932 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 9014	TANK-933 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0015	TANK-934 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/ 0016	TANK-935 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/ 0017	TANK-936 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0019	TANK-942 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
147 0020	TANK-943 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
147 2021	TANK-947 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/ 0022	TANK-948 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/ 0023	TANK-949 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0024	TANK-950 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
11/ 0025	TANK-955 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
1-17 0026	TANK-956 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1/ 0027	TANK-959 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0028	TANK-960 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/-0029	TANK-961 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0030	TANK-962 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY NJDEP, DIV OF ENV QUALITY		
11/-0031	TANK-963 AIR PERMIT TANK-964 AIR PERMIT	AIR	NUDEP, DIV OF ENV QUALITY		
147-0032	TANK-965 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0034	TANK-966 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0035	TANK-967 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
14/ 0036	TANK-968 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0037	TANK-969 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/-0038	TANK-970 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0039	TANK-971 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 1040	TANK-972 AIR PERMIT	AIR	NJDEP. DIV OF ENV QUALITY		
17 0041	TANK-973 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
1117-0042	TANK-974 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY		
11/ 0043	TANK-975 AIR PERMIT	AIR	NUDER DIV OF ENV QUALITY	/	
11/ 1044	TANK-986 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	V87/08/02	92/08/02
17 0045	TANK-987 AIR PERMIT TANK-990 AIR PERMIT	AIR	NJDEP, DIV OF ENV QUALITY	73.7.007.02	22.00,02
17 0046	INUE AND WIN SERMI	AIR	MUNICE, DIA OF EUA MANELLIA		

	HUDSON REGIONAL HEALTH COMMISSION, 1991 RENEWALS AND FEES		
PERMIT NAME	HUDSON REGIONAL HEALTH COMMISSION, 1991 RENEWALS AND FEES PERM_COMMENT	RENEWAL_FEE	EXPIRE_DATE
A ATHALT FURNACE AIR PERMIT	ASPHALI FURNACE EMISSIONS, 85 GAL/HR. CATEGORY II	\$500	96/03/31
BOLLER #1 AIR PERMIT	BOILER #1 EMMISSIONS, 730 GAL/HR, CATEGORY II	\$500	96/03/31
HOTTIR #2 AIR PERMIT	BOILER #2 EMMISSIONS, 730 GAL/HR, CATEGORY II	\$500	96/03/31
HOL OIL HEATER AIR PERMIT	HOT OIL MEATER CHEM PLANT, 20 GAL/HR, CATEGORY II		96/03/31
RELISTRATION HAZ, WASTE GEN.	IN COMPLIANCE WITH SECT 8, OF HAZ SUBST CONTROL CD, HRHC	\$5,000	96/01/01
REPORT - HAZ, WASTE GEN	IN COMPLIANCE WITH SECT.8, OF HAZ SUBST CONTROL CD, HRHC		92/01/01
IAHR G-2 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS	\$350	96/03/31
IANK 1009 AIR PERMIT	AVGAS 100	\$350	96/03/31
IANE 1010 AIR PERMIT	TOLULENE	\$350	96/03/31
TANK 1012 AIR PERMIT	ALLOWED CONTENTS HEPTANE	\$350	96/03/31
INTER 1013 AIR PERMIT	LT NAPTHA.HVY NAPTHA.HEXANE,HEPTANE,CUTBACK NAPTHA & KERO	\$350	
TANK 1014 AIR PERMIT	LT NAP, HVY NAP. KERO & DSL	\$350	96/03/31
TAHK 1015 AIR PERMIT	ALLOWED CONTENTS HEPTANE	\$350	96/03/31
IANK 1016 AIR PERMIT	ALLOWED CONTENTS: CUTBACK NAPTHA	\$350	96/03/31
TANK 1017 AIR PERMIT	CONTENTS: LT. NAP, HVY. NAP, AVGAS, TOLULENE, MOGAS, KERO	\$350	96/03/31
TANK 1025 AIR PERMIT	XYLENE	\$350	96/03/31
TANK 1026 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS AVGAS 100 TOLULENE ALLOWED CONTENTS HEPTANE LT NAPTHA, HVY NAPTHA, HEXANE, HEPTANE, CUTBACK NAPTHA & KERO LT NAP, HVY NAP. KERO & DSL ALLOWED CONTENTS HEPTANE ALLOWED CONTENTS: CUTBACK NAPTHA CONTENTS:LT.NAP, HVY.NAP, AVGAS, TOLULENE, MOGAS, KERO XYLENE ALLOWED CONTENTS VARSOL ALLOWED CONTENTS VARSOL ALLOWED CONTENTS VARSOL AROMATIC 100	\$350	96/03/31 96/03/31
			96/03/31
TANK 1028 AIR PERMIT	AROMATIC TOU		96/03/31
TANK 1029 AIR PERMIT	AROMATIC 100 ALLOWED CONTENTS VARSOL 18 LOPS NORPAR 15		96/03/31
TANK 1030 AIR PERMIT	1002	\$550	91/03/31
TARK 1032 AIR PERMIT	NUMPAK ID	\$350	96/03/31
IANK 1034 AIR PERMIT	ALLUWED CONTENTS MODDAR 12	\$350	
TARE 1035 AIR PERMIT	LOPS NORPAR 15 ALLOWED CONTENTS 2429 NAPTHA ALLOWED CONTENTS NORPAR 12 ISOPAR G ALLOWED CONTENTS MIXED SOLVENTS ALLOWED CONTENTS MIXED SOLVENTS ISOPAR E		96/03/31
TANK 1047 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS		96/03/31
LAUR 1094 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS	\$350	96/03/31
LAUR 1094 ATR PERMIT	ISOPAR E	\$350	96/03/31
Late 1095 AIR PERMIT	I SOPAR C	\$350	96/03/31
LANE /15 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS ISOPAR E ISOPAR C ALLOWED CONTENTS MIXED SOLVENTS ALLOWED CONTENTS MIXED SOLVENTS TANK HAS BEEN DEMOLISHED ALLOWED CONTENTS CYCLO HEXANE & VINYL ACETATE DOES NOT STORE A VOS ALLOWED CONTENTS AROMATIC NAPTHA NO LONGER STORES VOS DOES NOT STORE A VOS DELETE		96/03/31
FAIR 716 AIR PERMIT	ALLOWED CONTENTS MIXED SOLVENTS	\$350	96/03/31
TALLE /24 AIR PERMIT	TANK HAS BEEN DEMOLISHED		
TAUK 725 AIR PERMIT	ALLOWED CONTENTS CYCLO HEXANE & VINYL ACETATE	\$350	96/03/31
TAME 734 AIR PERMIT	DOES NOT STORE A VOS		
TAMP 735 AIR PERMIT	ALLOWED CONTENTS AROMATIC NAPTHA	\$350	96/03/31
IANK 136 AIR PERMIT	NO LONGER STORES VOS		
TAHK 738 AIR PERMIT	DOES NOT STORE A VOS DELETE		
TANK 744,745,746 AIR PERMIT	NOT A VOS	\$350	96/03/31
FARE 916 AIR PERMIT	ALLOWED CONTENTS LI NAPIHA, HVY NAPIHA, MOGAS	\$350	
IANK 918 AIR PERMIT	ALLOWED CONTENTS LI NAPIHA, HEAVY NAPIHA, MOGAS		96/03/31
TAME 319 AIR PERMIT	ALLOWED CONTENTS LI NAPIHA, HEAVY NAPIHA, MUGAS	\$350	
TAIR 920 AIR PERMIT	ALLOWED CONTENTS I NAPTHA, HEAVY NAPTHA MOGAS	\$350	
TANK 921 AIR PERMIT	ALLOWED CONTENTS DO OD AND MC CITRACK ASPHALTS		96/03/31
TANK 927 AIR PERMIT	ALLOWED CONTENTS OF OR AND MC CUTBACK ASPHALTS		96/03/31
TANK 928 AIR PERMIT	ALLOWED CONTENTS RC. OD. AND MC CUTBACK ASPHALTS	\$350	
TARE 930 AIR PERMIT	ALLOWED CONTENTS RC. OD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
LANE 931 AIR PERMIT	ALLOWED CONTENTS RC. OD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
TANK 932 AIR PERMIT	ALLOWED CONTENTS RC. OD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
TARK 932 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
TARK 933 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS		96/03/31
TARE 934 AIR PERMIT	ALLOWED CONTENTS LT NAPTHA, HVY NAPTHA, MOGAS ALLOWED CONTENTS LT NAPTHA, HEAVY NAPTHA, MOGAS ALLOWED CONTENTS RC, QD, AND MC CUTBACK ASPHALTS	\$350	96/03/31

	HUDSON REGIONAL HEALTH COMMISSION, 1991 RENEWALS AND FEES		
11 MMIT_NAME	PERM COMMENT	RENEWAL FEE	EXPIRE DATE
A-444-			
IANA 935 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
IANK 936 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
TIMBA SIA PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
IANK 938 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
IANE 941 AIR PERMIT	ALLOWED CONTENTS RC. OD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
AND 942 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
ANK 943 AIR PERMIT	ALLOWED CONTENTS RC. QD. AND MC CUTBACK ASPHALTS	\$350	96/03/31
IANK 987 AIR PERMIT	ALLOWED CONTENTS VARSOL 18	\$350	95/03/31
HIST I AIR PERMIT	UGST 1 . CONTENTS MOTOR GASOLINE	\$250	96/03/31

	DATA HASE TABLE OF CONTENTS SO	DIED BY TUDE	R NUMBER
I I MIT NO	PLEMIT NAME		
THAT I HO	FERMIT NAME	HERMIT TYPE	ALLOWED CONTENTS
M THE 0107	MARINE RADIO LICENSE	EQUIP	PERMIT ISSUED TO EXXON COMMUNICATIONS COMPANY (KPB 611)
41-1NE-0110	BOOM BOAT REGISTRATION	EUUIP	PERMIT 1330ED TO EXAME COMMONICATIONS COMPANY (RPD BIT)
INE OILL	BOOM BOAT REGISTRATION	EQUIP	
11-1NE-0112	BOOM BOAT REGISTRATION	EQUIP	
AL THE -0113	BOOM BOAT REGISTRATION	EQUIP	
INE-0114	BUOM BOAT REGISTRATION	EUUIP	
SEINE -OLIS	BOAT TRAILER REGISTRATION	EQUIP	
** UU15	RADIO STATION LICENSE	EQUIP	PERMIT I SUED TO EXXON COMMUNICATIONS COMPANY (KEA 786)
*** 0019	MAIN BLOG REFRIG COMPRESSORT	EQUIP	ANNUAL INSURANCE INSPECTION REQUIRED
0020	MAIN BLDG REFRIG COMPRESSOR2	EQUIP	ANNUAL INSURANCE INSPECTION REQUIRED
- 4 4 - 0021	FIRE ENGINE 1 REGISTRATION	FOOTP	DI.BA90071U257
0022	FOAM TRUCK 1 REGISTRATION	EQUIP	MPBA 900610367
*** 0023	DIESEL TRUCK REGISTRATION	EQUIP	MPBA900610367
11024	PAYLOADER REGISTRATION	EQUIP	MPBA 900610367

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. III IX I'LHMII WATA BASL
                            TABLE OF CONTENTS SORTED BY TYPE & NUMBER
DA LIMITE
                   PLRMIT NAME
                                                    PERMIT TYPE ALLOWED CONTENTS
here HAL DUUZ
                   J. WROBLEWSKI - PIC CERTIF
                                                    PER
Marie I ME - 0003
                   J. WOERNEH - PIC CERTIF
                                                    PER
1.00 INE -0004
                   N. WILLIAMSON - PIC CENTIF
                                                    PER
tand THE -0005
                   R. WICKERSTY - PIC CERTIF
                                                    PER
Mart: 1 HE - 0006
                  R. VIOLA - PIC CERTIF
J. VIOLA - PIC CERTIF
                                                    PER
Mat. INE -0007
                                                    PFR
Hait | HE -0008
                  C. TAYLOR - PIC CERTIF
                                                    PER
MAKINE-0009
                  N. SPIERS - PIC CERTIF
                                                    PER
MAILINE - 0010
                  V. SMITH - PIC CERTIF
                                                    PER
                  W. SEXTON, JR. - PIC CERTIF
MAMINE-0011
                                                    PEH
MARINE-0012
                   J. SCHUMANN - PIC CERTIF
                                                    PER
MARTINE-0013
                  R. SCERBO - PIC CENTIF
                                                    PER
16H/1NE-0014
                  P. RICE - PIC CERTIF
                                                    PER
MARTINE-0015
                   M. PETRICK - PIC CERTIF
                                                    PER
IN KINE-0016
                   M. O'ROURKE- PIC CERTIF
                                                    PER
W . INE-GOIT
                  R. ORLUWSKI - PIC CERTIF
                                                    PER
W WITH -0018
                   J. OPEL - PIC CERTIF
                                                    PER
1 WINE -0019
                  B. MORGAN - PIC CERTIF
                                                    PER
MORINE - 0020
                  D. MILLER - PIC CERTIF
                                                    PER
. .... I HE -0053
                   S. LOWREY - PIC CERTIF
                                                    PER
                  W. LEE - PIL CERTIF
1.1.11 HE - 0054
                                                    PER
11 1: 1NE - 0055
                  A. LACA - PIC CERTIF
                                                    PER
115KTHE-0056
                  C. KISCH - PIC CERTIF
                                                    PER
1 1111E 0057
                  G. KILEY - PIC CERTIF
                                                    PER
1..... INE : 005B
                  J. JONES PIC CERTIF
                                                    PER
                  R. ISBRECHT . PIC CERTIF
10 -10 HE 0059
                                                    PER
Med. INE UUGO
                  R. HUDNETT PIC CERTIF
                                                    PER
                  W. HUBERY . PIT CERTIF
MARTINE - 0061
                                                    PER
                  R. HURN PIC CLRTIF
1-1-11 | 11E - 0062
                                                    PEH
                  R. HAY - PIC CERTIF
MANTHE 0063
                                                    PER
MARTINE-0064
                  R. HARKNESS - PIC CERTIF
                                                    PER
                  E. GENUZWELL - PIC CERTIF
                                                    PEH
MAI: 111E-0065
MARTINE - 0066
                  C. GALLAGHER - PIE CENTIF
                                                    PEH
                  P. FOLLY - PIC CERTIF
MAKINE-U067
                                                    PER
1.... INE -0068
                  E. FERNANDEZ - PIC CENTIF
                                                    PER
                  R. DZBENSKI - PIC CERTIF
MAKINE-U069
                                                    PER
                  R. DWORZANSKI - PIC CERTIF
MAN 1 4E-0070
                                                    PER
                  K. DUNGVAN - PIC LERIIF
MAKINE-0071
                                                    PER
MAI: INE - 0072
                  G. DONOHUE
                              PIC CERTIF
                                                   PER
                  S. DOHERTY - PIC CERTIF
MAI! I HE - 0073
                                                    PER
                  1. DIUNISIO - PIC CERTIF
MAISTINE -0074
                                                    PER
WANTHE DOTS
                  D. DIMASIBA PIC CERTIF
                                                    PER
                  D. DIETRICH - PIC CERTIF
MARTINE -UU76
                                                    PEH
                  R. DIAZ PIC CERTIF
MAI: 111E 0077
                                                    PER
                  L. CONLEY MCGOVERN PIC CERT
                                                   PEH
MARTHE - 0078
MAI INE-0079
                   J. CONDERO - PIC CERTIF
                                                    PER
                  G. CULLINS - PIC LERIIF
                                                    PER
MARTHE-0080
                  O. CODY PIC CERTIF
                                                    PER
MAIL I NE - 0081
MARINE-0082
                  D. CARROLL - PIC CERLIF
                                                    PER
MARINE - 0083
                  E. CALLES - PIC CERTIF
                                                    PER
MAI: 1 HE - 0084
                  R. BRUAUBENT - PIC CERLIF
                                                   PER
                  J. BOWERS - PIC CERTIF
                                                    PER
MANTHE - 0085
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THEFT'S PERMIT DATA BASE TABLE OF CONTENTS SORTED BY TYPE & NUMBER
ON LIMIT
                  PERMIT NAME
                                                  PERMIT TYPE ALLOWED CONTENTS
· ··· THE -Duttb
                  H. BITWINSKI - PIC CERTIF
                                                  PER
Co tid Obst/
                  F. ALBIETZ . PIC CERTIF
                                                  PER
Men THE -DUBH
                  D. AMERN - PIC CHRISE
                                                  HHH
MAN THE GONS
                  R. WINDER - PIC CERTIF
                                                  PEH
WHITHE - UUSU
                  P. UNIS- PIC CERTIF
                                                  PER
doi: 1 RE - 009 1
                  C. RHODES - PIC CERTIF
                                                  PER
MAH THE-UD9 2
                     SEALLS - PIC CENTIF
                                                  PER
1001/11/E - 0093
                  R. QUINN - PIC CERTIF
                                                  PER
MAKTHE -0094
                  P. MUNDELL - PIC CERTIF
                                                  PER
                  R. MILES - PIC CERTIF
Makine-0095
                                                  PER
MARTHE -0096
                  T. MAHON - PIC CERTIF
                                                  PER
10.001 NE - 11097
                  F. LOURING - PIC CERTIF
                                                  PER
1 WE THE 0098
                  W. KERN . PIC CERTIF
                                                  PER
LUNE -0099
                  W. JONES - PIC CERTIF
                                                  PEH
ti - INE -0100
                  P. FOLEY - PIC CERTIF
                                                  PER
JANUARE-UIUI
                  J. DIDUNATO - PIC CERTIF
                                                  PEH
                  S. BASIRICO - PIC CERTIF
Mar 1 NE - 0102
                                                  PER
1 .... INE 0103
                  1. BLEACH - PIC CERTIF
                                                  PEH
1 .1. INE - 0104
                  J. BEANE - PIC CERTIF
                                                  PER
Mai-1111 0105
                  J. BARES - PIC CERTIF
                                                  PER
HARTINE - 0106
                  K. ARI INGTON - PIC CERTIF
                                                  PER
. 0026
                  F I ALBILIZ WWIP LICENSE
                                                  PLH
                                                                NN CLASS LICENSE EQUIVALENT TO N2 CLASS LICENSE
. . . 0027
                  R SCERBO WWIP LICENSE
                                                                NN CLASS LICENSE EQUIVALENT TO N2 CLASS LICENSE
                                                  HIH
· · · 0028
                  G DONUMBE GOLD SEAL BUILER
                                                  PER
                                                                CLASSIFICATION 1A-22-23-24
 ... 0029
                  F ALBIETZ GOLD SEAL BOILER
                                                  PFR
                                                                CLASSIFICATION IA 21-22-23
 .. 0030
                  E KAMINSKI RED SEAL BOILER
                                                  PER
                                                                CLASSIFICATION IB ISSUE 7.8.9
                  R HUDNETT RED SEAL BOILER
                                                                CLASSIFICATION IB ISSUE 11.12.13
 .. 110.31
                                                  PER
 .. 0032
                  R LEON RED SEAL BOILER
                                                  PER
                                                                CLASSIFICATION IB ISSUE 11,12,13
                                                                                  ISSUE 5.6.7
 -- 11033
                  R DIAZ BLUE SEAL BOILER
                                                  PER
                                                                CLASSIFICATION IC
                                                                                   155UE 4.5.6
  . . 11034
                  D GOODSON BLUE SEAL BUILER
                                                  PER
                                                                CLASSIFICATION IC
-- 0035
                  B WALSH BLUE SEAL BUILER
                                                  PER
                                                                CLASSIFICATION IC
                                                                                    ISSUE 10, 11, 12
1 - - 4 0036
                  R HORN BLUE SEAL BOILER
                                                  PER
                                                                CLASSIFICATION IC
                                                                                   15SUE 6.7.8
. .. s 10037
                                                                CLASSIFICATION IC ISSUE 3,4,5
                  U CUACHMAN BLUE SEAL BUILER
                                                  PER
1144 0150
                  M J. PETRICK IRPL CERTIF
                                                  PER
                  S A DOHERTY - IRPL CERTIF
                                                  PER
11-11 0151
                  K M DONOVAN - IRPL CERTIF
                                                  PER
11-11-0152
1141 0153
                  VINCENT SMITH - IRPL CERTIF
                                                  PER
                  R G BITWINSKI - IRPL CERTIF
1111 0154
                                                  PER
                  J E OPEL . IRPL CERTII
                                                  PER
1.41 0155
                  I DIONISIO - IRPL CERIIF
                                                  PER
11-11 11157
                  K J KIRBY IRPL CERTIF
                                                  PER
1141 0158
11-11 0159
                  R P DWORZANSKI - IRPL CERTIF
                                                  PER
. 141 1 1/160
                  H J DZHENSKI - INPL LIRTIF
                                                  PER
1141 0161
                  D K AHERN IRPL CERTIF
                                                  PER
1141 0162
                  P J RICE - IRPL CERTIF
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1.4.4 12.1			
THUTLK PERMIT	DATA BASE TABLE OF CONTENTS SE	NATED BY TYPE	X NIMBED
PERMIT NO	PERMIT HAME		ALLOWED CONTENTS
	be sweet as well	160/00-00-00	
8000 >	SARA 111 - 312 REPORT	REPRI	
· · · · · · · · · · · · · · · · · · ·	GENERATUR'S ANNUAL REPURT	REPRI	IN COMPLIANCE WITH NJAC 7:26 7.4(G)
0041	REPORT - HAZ, WASTE DEN.	REPRT	IN COMPLIANCE WITH SECT. B. OF HAZ SUBST CONTROL CD. HRHC
0042	HAZARDOUS SUBSTANCE INVENTOR	REPRI	NJRTK 5312
0043	HAZ WASTE GENERATOR REPORT	REPRI	

1-664 13.1			
INTEX PERMIT	DATA BASE - TABLE OF CONTENTS SC	DRTEN BY TYPE	& NUMBER
ON TIMEST	PLRMIT NAME	PERMIT TYPE	ALLOWED CONTENTS
	*******	*******	
100 THE -0108	PIER NO. 6 DOLPHIN NAV LIGHT	USCG	
MAR INE -0109	PIER NO. 6 EXTENSION	USCG	
0014	WELDING AND HOT WORK PERMIT	USCG	
1016	MARPOL HYDRUCARBONS	USCG	
0017	MARPOL SOLVENTS	USCG	
× 0018	MARPOL CERTIFICATE	USCG	

14-1			
THEFT SPERMIT	DATA BASE TABLE OF CONTEN	TS SURTED BY TYPE &	NUMBER
11350011200			
- 0001	USTI REGISTRATION UST2 REGISTRATION		CONTENTS MOTOR GASOLINE

15.1

THEFT PERMIT DATA HAVE TABLE OF CONTENTS SORTED BY TYPE & NUMBER

TITMLE NO PERMIT NAME PERMIT TYPE ALLOWED CONTENTS

HELISTRATION-HAZ. WASTE GEN WASTE IN COMPLIANCE WITH SECT. 8, OF HAZ SUBST CONTROL CD. HRHC

ATTACHMENT I-IV

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION MONITORING WELL PERMIT SEPTEMBER 24, 1992

SERIAL # 28849

DWR-133M (4/90)

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES TRENTON, N.J.

If Yes, give pump

capacity

GPM

Mail to

Water Allocation CN 029 Trenton, N.J. 08625

MONITORING WELL PERMIT

Type of Well

	- VALID ONLY AFTER	APPROVAL BY THE D.E.P. COORD #: 26 . 23 . 843
Owner Exxon	Company USA	Driller Environmental Drilling, Inc.
Address 250 Ea	ast 22nd Street	Address Stafford Forge Rd.
Bayonr	ne, NJ 07002	West Creek, NJ 08092
Name of Facility	Exxon Bayonne Plant	Diameter of Well(s) 6 Inches Depth of Well(s) 30 Fee
Address	250 East 22nd Street	
	Bayonne, NJ 07002	Applied for (max. 10) _6 be installed? YES \Boxed NO 00

Monitoring

LOCATION OF WELL(S) Lot # Block# Municipality County Draw sketch of well(s) nearest roads, buildings, etc. with Hudson Bayonne 419 marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch. State Atlas Map No. 26 BERM TAUC 1065 LOW DRUM SULFUR Buildi 15 Tank 151 1068 Field 1069

	40	38		NOTE :	WELL	LOCATIONS	MAY	CHANGE	<u> </u>
				VELLS, OR PIEZOMETERS WELLS ARE BEING INST		OWING MUST BE C	OMPLETE	D BY THE	This Space for Approval Stamp
□ Spill I	Fund Cas	46							7ED
E ECR	A Case								Dept. of Environ Water Allocation
O CERC	CLA (Supe	erfund) S	te			40000			Dept. of Environ Awater Allocation Water Resources Awater Allocation
O RCR	A Site					Case I.D. N	lumber		Water Rescuis
□ Unde	rground S	Storage T	ank						SEP 24 1992
O NUPO	ES Munic	cipal Disc	charge Permit		-				SEL SE MAN
O NUPO	ES Indus	trial Disc	harge Permit						
Div. H	lazardous	waste I	Agmt. Enforceme	ent Case					10 mm
Div. V	Water Res	ources E	nforcement Case	,					
	r Supply / r (explain)		st Observation V		ME	SURE_			***************************************
FC D.E	.P. A		e of this permit is litoring purposes	s subject to the conditions a only	ttached. (see		he well(s) ri ncased bor		pleted with more than 25 feet of total screen or

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS AND REGULATIONS PERTAINING TO THIS PERMIT. In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as describ-

Signature of Driller

COPIES:

Water Allocation - White and Pink

Signature of Owner Health Dept. - Yellow

Owner - Blue

Driller - White

APPENDIX J

Summary of Civil and Criminal Enforcement Actions

APPENDIX J

CIVIL AND CRIMINAL PENALTIES

List from Exxon legal and environmental coordinator files for Bayonne - 3 pages.

CIVIL AND CRIMINAL PENALTIES

AGENCY	DATE OF ACTION	DATE OF EXECUTION	TYPE	DESCRIPTION	STATUS
PIRG/NJDEPE	5/24/89	10/86-4/89	Private lawsuit under Clean Water Act to enforce applicable permit limitations	Permit exceedance	Settled 95k\$ agreement reached - 7/90 - Filed 11/90
USCG	11/21/85	3/27/84	Civil Penalty of \$75	Oil discharged from sump pump into Kill Van Kull	1
NJDEPE	5/14/85 & 6/14/85 (emended)	9/27/84	NOV and Penalty settlement offer	Failure to provide haz waste code and EPA haz waste ID # on manifest #NJ0170582	Payment of \$875 - penalty
USCG	2/25/80	9/19/79	Civil penalty of \$200	Wax discharge from Pier #1 into Kill Van Kull	Payment of penalty
NJDEPE	11/16/88	4/88 - 7/88	NOV	Effluent violations for toluene and ethylbenzene at DSN001; for oil/grease at DSN001 ? 002	7.
USCG	3/2/78	10/22/77 - 10/27/77	Civil penalty of \$150	Oil discharge into Kill Van Kull as result of ground seepage	Paid penalty
uscg	3/1/78	1/13/78	Civil penalty of \$150	Oil discharge into Kill Van Kull as result of fuel line not being completely drained before maintenance	Paid penalty
NJDEPE	1/79	7	NOV	East aide separator and filters	7
USCG	1/79	7	Civil penalty	Oil seepage past Pier 8 bulkhead	7
uscg	1/79	1	Civil penalty	Oil seepage past idle salt water pump station bulkhead	7
USCG	1/79	7	Civil penalty	Oil seepage past the Berth 8 bulkhead	7
	1/79	7	Civil penalty	One gallon spill at fuel oil	7

			CIVIL AND CRIMINAL PENAL	LTIES	
AGENCY	DATE OF ACTION	DATE OF EXECUTION	TYPE	DESCRIPTION	STATUS
NJDEPE	12/2/87	11/10/87	Compliance Evaluation Inspection Directive	Failure to submit BMP Plan by 2/1/87 re: NJPDES Permit # NJ0002089	Exxon letter to DEPE dated 1/13/88 agreeing to correct deficiencies
				Oil skimmers on API separator at discharge 001 were out of service in violation of Part I, Page 2, Section 5(A) of NJPDES Parmit # NJ0002089	
				Permit limits for toluene, chlorobenzene, ethylbenzene were exceeded on DMRs for report period 7/1/87 - 7/31/87	
				Permit limits for oil and grease, toluene and chlorobenzene at discharge 001 were exceeded on DMR's dated 8/1/87-8/31/87	
USCG	6/14/78	3/31/78	Civil penalty of \$150	Oil discharge from Pier 7 into Kill Van Kull	Paid penalty
USCG	7	1/14/78	Civil penalty of \$150	Oil discharge from Pier 6 into Kill Van Kull	Paid penalty
USCG	2	7/18/77	Civil penalty of \$600	Oil discharge from Pier 7 Into Kill Van Kull	Paid penalty
USCG	11/19/80	9/7/80	Civil penalty of \$100	Oil discharge from Pier 6 into Kill Van Kull	Peid penalty
USCG	ř	6/28/78 - 8/17/78	Civil penalty of \$1,500	Oil seepage from ground to navigable water from Pier 3 to Kill Van Kull	As result of administrative hearing, penalty reduced to \$400 plus written statement from USCG that civil penalty will no longer be assessed provided Exxon exercises due diligence to eliminate seepage
NJ State Police	7	11/20/90	Summone #55586	Alleged violation of NJSA 23:5- 28	7
NJDEPE	10/29/82	3/1/82	NOV	Alleged violation of NJAC 7:26-7:6 (f)(2)	Exxon requested NOV be rescinded - no response from DEPE

CIVIL AND CRIMINAL PENALTIES

AGENCY	DATE OF ACTION	DATE OF EXECUTION	TYPE	DESCRIPTION	STATUS
NJ State Police	5/22/89	5/22/89	Citation	Failure to properly placerd a truck per DOT regulations	*
NJ State Police	11/1/90	11/1/90	Summons #MP64307	Improper display of decal	Payment of \$31.00 penalty
NJ Stata Police	9/9/85	9/9/85	Summons #A21465	Improper placarding per DOT regulations	At trial, Exxon found not guilty
NJ State Police	9/9/85	9/9/85	Summons #21466	Incorrect description on shipping papers per DOT regulations	Plead guilty paid \$1,015 penelty
NJDEPE	1974	7	Civil action: State of NJ DEPE v. Exxon Corp. and ICI Americas, Inc.	Action by DEPE against Exxon to enjoin/remediate discharge of petroleum to waters of state	Settlement involving payment of monetary damages plus installation of interceptor trench

RBHUPENALTY.119

APPENDIX K HAZARDOUS SUBSTANCE STORAGE

CONTENTS

			Page
INTRODUCTION			 K-1
ABOVEGROUND STORAGE TANKS			 K-1
UNDERGROUND STORAGE TANKS			 K-1
TREATMENT PLANTS AND PLANT	SEWE	ERS	 K-2
PIPELINES	e.		 К-3
REFERENCES	1111		 , K-4

TABLE

K-1. Inventory of Storage Tanks at the Exxon Plant, Bayonne, New Jersey.

APPENDIX K HAZARDOUS SUBSTANCE STORAGE

INTRODUCTION

This section was prepared in accordance with the Administrative Consent Order of November 27, 1991 (ACO), Appendix B, Section IIB, Item 11 for the Exxon Company Plant, Bayonne, New Jersey (the Plant). Item 11 requests descriptions of tanks, containers, surface impoundments, landfills, septic systems, and any other structure, vessel, contrivance or unit that contains or previously contained hazardous substances or wastes. At the site, this may include aboveground storage tanks, two underground storage tanks, treatment plants and plant sewers, and extensive systems of pipelines.

ABOVEGROUND STORAGE TANKS

The Exxon Company Bayonne Plant, principally stores its products, raw materials, and storm water in aboveground storage tanks. Similar products are generally stored in the same tank field. (CH2M Hill, Inc. 1991)

A summary of the tank names, tank capacities, ages, dimensions, and products stored at the Exxon Company Bayonne Plant is provided in Table K-1. These data have been compiled from various historical tank inventory lists and Plant personnel interviews. Many of the tanks are presently being phased out of service as the Plant reduces operations. Tank locations are shown in the Operational Areas shown on Figure A-2 of Appendix A of the ACO Site History Deliverables. It was not feasible to label all tanks in the Chemical Plant Area since it is presently being dismantled.

UNDERGROUND STORAGE TANKS

There are two underground storage tanks at the facility with a capacity of 2,000 gallons each. One tank, which stores gasoline, was replaced in September 1989 with a double-wall tank

with interstitial monitoring and overfill protection and containment. The second tank which stores mixed solvent is a single-wall steel tank constructed in 1979. This tank was scheduled for removal in 1991. (CH2M Hill, Inc. 1991; James C. Anderson Associates, Inc. 1991).

TREATMENT PLANTS AND PLANT SEWERS

Water, comprised of rainwater runoff, drained contact water, steam condensate, oncethrough cooling water, pumped ground water, and general wash water, is collected by a plantwide sewer system and treated at the on-site East Side and West Side Treatment Plants.
Chemical process wastewater is collected by a separate sewer system and trucked off-site (Exxon
Company, U.S.A. and Exxon Chemical Americas 1990). The East Side Treatment Plant is
located in the Lower Hook Tank Field and Piers Area; the West Side Treatment Plant is located
in the southern portion of the Lube Oil Area; the Chemical Waste Treatment Plant is located in
the south-central portion of the Exxon Chemical Plant Area. (Figure A-2 of Appendix A of the
ACO Site History Deliverables). A series of Plant sewers discharge to the East Side and West
Side Treatment Plants or the Chemical Waste Treatment Plant as shown on Attachment C-I of
Appendix C of the ACO Site History Deliverables.

The water collection facilities at the East Side Treatment Plant and the West Side Treatment Plant are the American Petroleum Institute (API) Separators. Sludges generated during the Treatment Plant's operations are stored in closed tanks prior to off-site disposal (Dames and Moore, Inc. 1979). The dimensions (width, length, and depth) of the East Side Separator components are as follows: Inlet Bay 6' x 50' x 10', Basin 14' x 44' x 10'; and, Separator 40' x 100' x 10' (Exxon Company, U.S.A. 1981). The dimensions of the West Side Separator components are as follows: Separator Basin 40' x 60' x 10', and dissolved air floatation (DAF) unit 20' x 108' x 10' (Exxon Company, U.S.A. 1981).

PIPELINES

Areas at the Bayonne facility are connected by an extensive pipeline system; products at the facility are continuously moved through this transfer system for loading, packaging, storaging, and blending operations (CH2M HILL, Inc. 1991). An inter-refinery pipe-line that previously connected the Exxon Company Bayonne Plant with the Exxon-Bayway Refinery has been out of service since January 2, 1990 (Exxon Company, U.S.A. and Exxon Chemical Americas 1990).

appk.doc

REFERENCES

- CH2M Hill, 1991. Best Management Plan for the Exxon Bayonne Facility, January 31, 1991.
- Dames and Moore. 1979. Bayonne Terminal and Chemical Plant Hydrogeologic Studies for Exxon Company, U.S.A., July 16, 1979 Report.
- Exxon Company, U.S.A. 1981. Memorandum from G.J. Matthews and L.J. McLauglin to B.S. Markham and W.L. Taetzch. Re: RCRA Closure Plan for Bayonne Plant. March 11, 1981
- Exxon Company, U.S.A and Exxon Chemical Americas. 1990. Spill Prevention Control and Countermeasure Plan, Discharge Preventions, Containment and Countermeasure Plan and Discharge Clean-up and Removal Plan, Bayonne Plant, Bayonne, New Jersey. Revised August 1, 1990.
- James C. Anderson Associates, Inc. 1991. Letter from W. Matulewicz to NJDEPE. Re: Closure and Site Assessment Plan, Light Oil Sump, December 9, 1991.

			Start Arm Arm	Appro			Page 1 o
Taul	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	47.00	Tank Dimensions	—Сар	acity		
Tank Number	Tank Type	Tank Year (Diameter x height Tank Context Type Built in feet) (Barrels) (Gallons)	Tank Content	Plant Grid Location (Block Number)			
A" - HILL T	ANK FIELD						
501	Carbon Steel AGST	1924	115x42	76980	3233160	Out of Service	C.D/2.3
602	Carbon Steel AGST	1920	115x42	73895	3103590	Out of Service	C/2.3
04	Carbon Steel AGST	1927	90x42	47263	1985046	Out of Service	B.C/2.4
605	Carbon Steel AGST	1929	90x42	47263	1985046	Out of Service	C.D/2.4
606	Carbon Steel AGST	1951	100x48	67184	2821728	Out of Service	C/2.4
07	Carbon Steel AGST	1923	50x42	14753	619626	Recycle Oil	B.C/3.5
808	Carbon Steel AGST	1923	50x42	14703	617526	Recycle Oil	B.C/3.5
13	Carbon Steel AGST	1928	90x42	47472	1993824	Storm Water	C.D/3.5
14	Carbon Steel AGST	1940	75x42	33284	1397928	Storm Water	C.D/3.5
16	Carbon Steel AGST	1953	100x48	67438	2832396	Storm Water	C/3.5
		(0.00)	1,000,000	61.199	2002000	Ottom Water	Gro.5
UBE OIL A	KEA						
	Carbon Steel AGST	1959	30x48	6079	255318	Univolt 60	C.D/6.12
g	Carbon Steel AGST	1959	30x48	6079	255318	Out of Service	C.D/6.12
	Carbon Steel AGST	1959	30x48	6079	255318	M.O. Disp.	C.D/6.12
(i)	Carbon Steel AGST	1959	30x48	6079	255318	Coray 150/750 Coastal	C.D/6.12
5	Carbon Steel AGST	1959	30x48	6079	255318	ATF	C.D/6.11
3	Carbon Steel AGST	1959	25x42	3696	155232	150 Vis. Solv Neutral	C.D/6.11
•	Carbon Steel AGST	1958	25x42	3695	155190	Motor oil 15W-40	C.D/6.11
3	Carbon Steel AGST	1958	25x42	3696	155232	1364	C.D/6.11
	Carbon Steel AGST	1958	25x42	3697	155274	200 SOL Ext. Coast Pal	C.D/6.11
0	Carbon Steel AGST	1959	25x42	3694	155148	Out of Service	C.D/6.11
î	Carbon Steel AGST	1959	25x42	3694	155148	Canthus 1000	C.D/6.11
2-1	Multi-Compartment AGST	1959	15x9*	322	13524	5380	C.D/6.11
2-2	Multi-Compartment AGST	1959	15x9**	322	13524	5382	C.D/6.11
2-3	Multi-Compartment AGST	1959	15x9***	322	13524	5386	C.D/6.11
3	Carbon Steel AGST	1957	30x48	6080	255360	1391 Base Oil	C.D/6.12
4	Carbon Steel AGST	1957	30x48	6078	255276	Coray 46/225 Coastal	C.D/6.12
5	Carbon Steel AGST	1959	30x48	6080	255360	CA 5W30	C.D/6.12
6	Carbon Steel AGST	1959	30x48	6082	255444	Univolt 60	C.D/6.12
7	Carbon Steel AGST	1968	25x42	3600	151200	75 Solvent Neutral	C.D/6.11
8	Carbon Steel AGST	1968	25x42	3600	151200	1960	C.D/6.11
9	Carbon Steel AGST	1958	25x42	3600	151200	GM ATF	C.D/6.11
20	Carbon Steel AGST	1958	25x42	3695	155190	Telura 619D	C.D/6.11
21	Carbon Steel AGST	1958	25x42	3695	155190	Out of Service	C.D/6.11
2	Carbon Steel AGST	1958	25x42	3695	155190	Diol 2213	C.D/6.11
23	Carbon Steel AGST	1958	25x42	3695	155190	200 Naphthenic STK	C.D/6.11
4-1	Multi-Compartment AGST	1959	15x9*	322	13524	5383	C.D/6.11
4-2	Multi-Compartment AGST	1959	15x9**	322	13524	5385	C.D/6.11
4-3	Multi-Compartment AGST	1959	15×9***	322	13524	5386	C.D/6.11
25	Carbon Steel AGST	1981	30x48	5800	243600	Hydraulic Oil Base	C.D/6.12
26	Carbon Steel AGST	1981	30x48	5800	243600	Univolt N-61	C.D/6.12
27	Carbon Steel AGST	1958	40x48	10823	454566	75 Solv. Ext. Coast Pl.	C.D/6.12
28	Carbon Steel AGST	1959	40x48	10823	454566	Telura 619	C.D/6
29	Carbon Steel AGST	1958	40x48	10827	454734	Low V.I. 150 Neutral	C.D/6.11
30	Carbon Steel AGST	1959	40x48	10824	454608	Necton 78/900 Coastal	C.D/6.11

Table K-1. Inventory of Storage Tanks at the Exxon Company Plant, Bayonne, New Jersey.

			- T. N F. IN	Approx	dmate		Page 2 of
3.42	100.7		Tank Dimensions	——Cap	acity		
Tank	Tank	Year	(Diameter x height			Tank Content	Plant Grid Location
Number	Туре	Built	in feet)	(Barrels)	(Gallons)		(Block Number)
UBE OIL A	REA (CONT.)						
1	Carbon Steel AGST	1959	40x48	10828	454776	Corny 220	C.D/6,11
2	Carbon Steel AGST	1967	30x48	6000	252000	M.O. Disp.	C.D/6.11
3	Carbon Steel AGST	1958	30x48	6022	252924	Diol 2213	C.D/6.11
5	Carbon Steel AGST	1981	30x48	5800	243600	1364	C/6
6	Carbon Steel AGST	1981	30x48	5800	243600	600 Neutral	C/6
7	Carbon Steel AGST	1959	40x48	10824	454608	370 Solvent Neutral	C/6
В	Carbon Steel AGST	1959	40x48	10825	454650	150 LP Solvent Neutral	C/6
9	Carbon Steel AGST	1959	40x48	10825	454650	150 S.E. Bright Stock	C/6
)	Carbon Steel AGST	1959	40x48	10824	454608	150 S.E. Bright Stock	C/6
1	Carbon Steel AGST	1959	40x42	9500	399000	325 Neutral	C/6
3	Carbon Steel AGST	1959	60x48	24409	1025178	130 Solvent Neutral	C.E/6.12
4	Carbon Steel AGST	1956	60x48	24265	1019130	L.P. 100 Neutral	C.E/6.12
5	Carbon Steel AGST	1956	60x48	24306	1020852	100 Pale Paraffin	C.E/6.12
5	Carbon Steel AGST	1956	60x48	24282	1019844	330 Solvent Neutral	C.E/6.11
7	Carbon Steel AGST	1959	20x42	2363	99246	ECA 13112 Slurry-P.C. 382549	C.E/6.11
3	Carbon Steel AGST	1959	20x42	2363	99246	150 Solvent Neutral	C.E/6.11
	Carbon Steel AGST	1959	20x42	2363	99246	0049	C.E/6.11
	Carbon Steel AGST	1959	20x42	2363	99246	Castrol DOCP	C.E/6.11
	Carbon Steel AGST	1959	20x42	2363	99246	Out of Service	C.E/6.11
2	Carbon Steel AGST	1959	20x42	2363	99246	Slurry-TLA 347A	C.E/6.11
3	Carbon Steel AGST	1959	20x42	2363	99246	Exernar X70	C.E/6.11
4	Carbon Steel AGST	1959	20x42	2363	99246	Out of Service	C.E/6,11
5	Carbon Steel AGST	1959	20x42	2363	99246	3147 Hydraulic Oil Base	C.E/6.11
	Carbon Steel AGST	1959	20x42	2363	99246	Paratone 856 Slurry P.C. 382656	C.E/6.11
	Carbon Steel AGST	1958	60x48	24373	1023666	L.P. 150 Neutral	C.E/6,12
3	Carbon Steel AGST	1951	55x48	20321	853482	600 Neutral	C.E/6.12
9	Carbon Steel AGST	1959	50x48	16931	711102	105 Coastal Pale	C.E/6.12
5	Carbon Steel AGST	1959	50x48	16933	711186	ATF 1975	C.E/6.11
i	Carbon Steel AGST	1981	30x48	5800	243600	Out of service	C.E/6,11
1-1	Multi-Compartment AGST	1959	15x15*	288	12096	ldle	C.E/6.11
1-2	Multi-Compartment AGST	1959	15x15**	288	12096	idle	C.E/6.11
4-1	Multi-Compartment AGST	1959	15x15***	288	12096	ldle	C.E/6.11
1-2	Multi-Compartment AGST	1959	15x15*	288	12096	idie	C.E/6.11
5-1	Multi-Compartment AGST	1959	15x15**	288	12096	ECA 11785-P.C.225384	C.E/6.11
5-2	Multi-Compartment AGST	1959	15x15***	288	12096	ECA 13610	C.E/6.11
5-1	Multi-Compartment AGST	1960	12x11'3*	244	10248	ECA-12823-P.C.225118	C.E/6.11
5-2	Multi-Compartment AGST	1960	12x11'3**	244	10248	Paraflow 385-50/50 Slurry	C.E/6.11
3-3	Multi-Compartment AGST	1960	12x11'3***	244	10248	ECA 9349-P.C.225273	C.E/6.11
,	Carbon Steel AGST	1959	15x30	953	40026	ECA 15400	C.E/6.11
	Carbon Steel AGST	1959	15x30	953	40026	Unvis J-13	C.E/6.11
2-1	Multi-Compartment AGST	1960	12x11'4"	244	10248	Unvis J-13	C.E/6.11
2-2	Multi-Compartment AGST	1960	12x11'4"	244	10248	Unvis J-13	C.E/6.11
2-3	Multi-Compertment AGST	1960	12x11'4***	244	10248	Acryloid HF833 50/50-P.C.382672	C.E/6.11
9	Multi-Compartment AGST	1955	12x121***	247	10374	1774	C.D/5.9
5	Multi-Compartment AGST	1955	12x121**	247	10374	Exmar 12TP40	C.D/5.9
1	Multi-Compartment AGST	1955	12x121*	247	10374	Exmar 30TP30	C.D/5.9
2	Multi-Compartment AGST	1955	12x121***	247	10374	Flexon 767	C.D/5.9

			S. 144.1	Appro				
Tart.	4.1	V-32	Tank Dimensions	—Сар	acity—	was brook	200000000000000000000000000000000000000	
Tank Number	Tank Type	Year Built		(Barrels)	(Gallons)	Tank Content	Plant Grid Location (Block Number)	
LUBE OIL A	REA (CONT.)							
83	Multi-Compartment AGST	1955	12x121**	247	10374	Canthus 680	C.D/5.9	
84	Multi-Compartment AGST	1955	12x121*	247	10374	Enmist EP460	C.D/5.9	
85	Multi-Compartment AGST	1955	12x121**	247	10374	5803	C.D/5.9	
86	Multi-Compartment AGST	1955	12x121**	247	10374	Gear Oil GX 80W-90	C.D/5.9	
87	Multi-Compartment AGST	1955	12x12'1"	247	10374	Exernar X60	C.D/5.9	
88	Multi-Compartment AGST	1955	12x121**	247	10374	100 LP Slovent Neutral	C.D/5.9	
89	Multi-Compartment AGST	1955	12x121**	247	10374	1358	C.D/5.9	
90	Multi-Compartment AGST	1955	12x121*	247	10374	Zerice 68	C.D/5.9	
91	Multi-Compartment AGST	1955	12x121**	247	10374	Univis N32	C.D/5.9	
92	Multi-Compartment AGST	1955	12x12'1"	247	10374	1774	C.D/5.9	
93	Multi-Compartment AGST	1955	12x12'1*	247	10374	Teresstic 77	C.D/5.9	
94	Multi-Compartment AGST	1955	12x121**	247	10374	1446	C.D/5.9	
95	Multi-Compartment AGST	1955	12x121**	247	10374	Instrument Oil	C.D/5.9	
96	Multi-Compartment AGST	1955	12x121*	247	10374	Teresstic N-150	C.D/5.9	
97	Carbon Steel AGST	1953	25x40	3500	147000	150 SN-LS	B.C/7.13	
98	Carbon Steel AGST	1953	25x40	3511	147462	ldle	B.C/7.13	
99	Carbon Steel AGST	1941	30x42	5312	223104	Idle	C.D/7.13	
101	Carbon Steel AGST	1960	20x30	1689	70938	Tromar TEP	C.D/5.9	
102	Carbon Steel AGST	1960	20x30	1689	70938	Nuto H-68	C.D/5.9	
103	Carbon Steel AGST	1960	20x30	1689	70938	Nuto H-32	C.D/5.9	
104	Carbon Steel AGST	1960	20x30	1688	70896	Torque Fluid 56	C.D/5.9	
105	Carbon Steel AGST	1960	20x30	1688	70896	Exemar X70	C.D/5.9	
106	Carbon Steel AGST	1960	20x30	1688	70896	Superflo 5W30	C.D/5.9	
107	Carbon Steel AGST	1960	20x30	1688	70896	Nuto H-45	C.D/4.8	
108	Carbon Steel AGST	1949	30x42	5289	222138	Superflo 10W40	C.D/4.8	
109	Carbon Steel AGST	1949	30x42	5287	222054	Superflo S/P 10W30	C,D/4.8	
10	Carbon Steel AGST	1925+	30x42	5316	223272	ATF 1941	C.D/4.8	
111	Carbon Steel AGST	1925+	30x42	5323	223566	ATF 1973	C.D/4.8	
112	Carbon Steel AGST	1925+	30x42	5351	224742	Superflo 10W-30	C.D/4.8	
113	Carbon Steel AGST	1960	25x48	4222	177324	Superflo ATF	C.D/4.7	
116	Carbon Steel AGST	1960	20x30	1689	70938	Out of Service	C.D/5.9	
117	Carbon Steel AGST	1960	20x30	1689	70938	ATF 1938	C.D/5.9	
118	Carbon Steel AGST	1960	20x30	1689	70938	100 Sol. Ext. Cos. PL.	C.D/5.9	
119	Carbon Steel AGST	1960	20x30	1689	70938	300 Sol. Ext. Cos. PL.	C.D/5.9	
20	Carbon Steel AGST	1960	20x30	1689	70938	Exmar XP	C.D/5.9	
21	Carbon Steel AGST	1960	20x30	1689	70938	Teresstic 32	C.D/5.9	
22	Carbon Steel AGST	1960	20x30	1689	70938	Diol 2212	C.D/4.8	
23	Carbon Steel AGST	1960	25x30	2649	111258	1767 Motor Oil 15W-40	C.D/4.8	
24	Carbon Steel AGST	1960	25x30	2643	111006	XD-3 15W40	C.D/4.8	
125	Carbon Steel AGST	1960	25x30	2643	111006	CA 5W30	C.D/4.8	
126	Carbon Steel AGST	1960	25x30	2643	111006	Superflo Supreme Perform 10W-40	C.D/4.8	
27	Carbon Steel AGST	1960	25x48	4224	177408	CA 5W30	C.D/4.8	
28	Carbon Steel AGST	1960	25x48	4223	177366	Diol 2211	C.D/4.7	
31-1	Multi-Compartment AGST	1961	12x10"11"	244	10248	Teresstic 77	C.D/5.9	
131-2	Multi-Compartment AGST	1961	12x10'3**	244	10248	Teresstic 150	C.D/5.9	
31-3	Multi-Compartment AGST	1961	12x10'3***	244	10248	5806	C.D/5.9	

131-1 Multi-Compartment AGST
131-2 Multi-Compartment AGST
131-3 Multi-Compartment AGST
See footnotes on last page.

	14.0	3.40	Tank Dimensions	Approx —Cap	dmate acity——	200.00	Jan en en
ank umber	Tank Type	Year Built	(Diameter x height in feet)	(Barrels)	(Gallons)	Tank Content	Plant Grid Location (Block Number)
UBE OIL A	REA (CONT.)						
32-1	Multi-Compartment AGST	1961	12x10'11"	260	10920	3099 Process Oil	C.D/5.9
32-2	Multi-Compartment AGST	1961	12x10'3**	237	9954	Teresstic 220	C.D/5.9
32-3	Multi-Compartment AGST	1961	12x10'3***	237	9954	1995	C.D/5.9
33-1	Multi-Compartment AGST	1961	12x10'11"	260	10920	idle	C.D/5.9
33-2	Multi-Compartment AGST	1961	12x10'3**	237	9954	Idle	C.D/5.9
33-3	Multi-Compartment AGST	1961	12x10'3***	237	9954	Idle	C.D/5.9
14-1	Multi-Compartment AGST	1961	15x12'8"	434	18228	Exmar 12TP30	C.D/5.9
14-2	Multi-Compartment AGST	1961	15x127***	434	18228	Exmar 24TP30	
15-1	Multi-Compartment AGST	1961	15x12'8*	434	18228	Aviation Oil 100	C.D/5.9
5-2	Multi-Compartment AGST	1961	15x11'8***	434	18228		C.D/5.9
16-1	Multi-Compartment AGST	1961	15x12'8*	434	18228	Caloria HT43	C.D/5.9
6-2	Multi-Compartment AGST	1961	15x128***	434	18228	1748 Heavy Duty Eng. Oil 30	C.D/4.8
7	Carbon Steel AGST	1961	15x30	949		Exmar XA	C.D/4.8
8					39858	150 Coastal	C.D/4.8
	Carbon Steel AGST	1961	15x30	949	39858	Teresstic 33	C.D/4.8
9	Carbon Steel AGST	1961	15x30	949	39858	Teresstic 68	C.D/4.8
0	Carbon Steel AGST	1961	15x30	949	39858	Superflo 20W50	C.D/4.8
1	Carbon Steel AGST	1961	15x30	949	39858	1643/1718 Motor Oil 30	C.D/4.8
2	Carbon Steel AGST	1961	15x30	949	39858	2576 Cylesstic 1500	C.D/4.8
3	Carbon Steel AGST	1961	15x30	949	39858	XD 3-30	C.D/4.8
\$	Carbon Steel AGST	1961	15x30	949	39858	XD-3 Extra 15W40	C.D/4.8
5	Carbon Steel AGST	1968	15x18	550	23100	1938 ATF	C.D/4.8
5-1	Multi-Compartment AGST	1961	12x10"11"	260	10920	PX-52 P.C. 225046	C.D/5.9
5-2	Multi-Compartment AGST	1961	12x10'3**	237	9954	Cylesstic TK460	C.D/5.9
3-3	Multi-Compartment AGST	1961	12x10'3***	237	9954	G.O. GX85W140	C.D/5.9
7-1	Multi-Compartment AGST	1961	12x10'11*	260	10920	XD-3 Extra 30	C.D/5.9
7-2	Multi-Compartment AGST	1961	12x10'3**	238	9996	Canthus 680	C.D/5.9
7-3	Multi-Compartment AGST	1961	12x10'3***	238	9996	5830 Cycle Oil 22	C.D/5.9
1-1	Multi-Compartment AGST	1961	12x10'11*	260	10920	Ethyl Flow 74	C.D/5.9
3-2	Multi-Compartment AGST	1961	12x10'3**	238	9996	Ethyl Flow 74	C.D/5.9
8-3	Multi-Compartment AGST	1961	12x10'3***	238	9996	5806	C.D/5.9
1-1	Multi-Compartment AGST	1961	12x10'3*	359	15078	XD-3 Extra 40	C.D/5.9
-2	Multi-Compartment AGST	1961	15x127***	509	21378	5805	C.D/5.9
1-1	Multi-Compartment AGST	1961	15x128*	434	18228	Unvis J26	C.D/5.9
0-2	Multi-Compartment AGST	1961	15x127***	434	18228	240 Pale Paraffin	C.D/5.9
1-1	Multi-Compartment AGST	1961	15x127*	434	18228	500 Coastal Pale	C.D/4.8
1-2	Multi-Compartment AGST	1961	15x12'8***	434	18228	Exxmar 24TP40	C.D/4.8
	Multi-Compartment AGST	1961	15x30'	949	39858	Busgard HD 30	C.D/4.8
4	Carbon Steel AGST	1961	15x30'	949	39858	Busgard HD 40	C.D/4.8
5	Carbon Steel AGST	1961	15x30'	949	39858	XD3-10W	C.D/4.8
	Carbon Steel AGST	1961	15x30'	949	39858	Teresstic N220	C.D/4.8
7	Carbon Steel AGST	1961	15x30	949	39858	Exxmar 30TP40	C.D/4.8
3	Carbon Steel AGST	1961	15x30'	949	39858	2329	C.D/4.8
	Carbon Steel AGST	1961	15x30'	949	39858	Teresstic 100	C.D/4.8
9	Carbon Steel AGST	1968	15x18	560	23520	Process Oil	C.D/4.8
0	Carbon Steel AGST	1968	15x18	560	23520	Humble Hydraulic H-68	C.D/4.8
ò	Carbon Steel AGST	1968	15x18	560	23520	1915	C.D/4.8
1	Carbon Steel AGST	1968	15x18	560	23520	Necton 60	C.D/4.8

170 Carbo 171 Carbo See footnotes on last page.

Table K-1. Inventory of Storage Tanks at the Exxon Company Plant, Bayonne, New Jersey.

5			Tank Dimensions		ximate acity—	The same of the	Page 5 of
Tank Number	Tank Type	Year Built	(Diameter x height in feet)	(Barrels)	(Gallons)	Tank Content	Plant Grid Location (Block Number)
UBE OIL AR	EA (CONT.)						
237	Carbon Steel AGST	1935	40x42	9306	390852	Disp. STK	B.C/4.7
38	Carbon Steel AGST	1908	40x30	6669	280098	Skimmed Oil/West Side Separator	B.C/4.7
02	Carbon Steel AGST	1899	32x22	3192	134064	Out of Service	B.C/4.8
03	Carbon Steel AGST	1899	30x20"	2535	106470	Out of Service	B.C/4.8
04	Carbon Steel AGST	1899	45x25	7156	300552	Out of Service	B.C/4.8
05	Carbon Steel AGST	1918	25x30	2601	109242	Out of Service	B.C/4.8
06	Carbon Steel AGST	1908	30x23	2982	125244	Out of Service	B.C/4.8
07	Carbon Steel AGST	1922	25x25	2206	92652	Out of Service	B.C/4.8
08	Carbon Steel AGST	1920	25x25	2160	90720	Out of Service	B.C/4.8
10	Carbon Steel AGST	1920	25×25	2177	91434	Out of Service	B.C/4.8
11	Carbon Steel AGST	1908	50x35	12034	505428	Out of Service	B.C/4.8
12	Carbon Steel AGST	1899	40x30	6764	284088	Hydraulic Oil	B.C/4.8
13	Carbon Steel AGST	1899	40x30	6734	282828	Out of Service	B.C/4.8
14	Carbon Steel AGST	1908	45:25	7030	295260	Out of Service	B.C/5.9
15	Carbon Steel AGST	1920	25/25	2147	90174	Out of Service	B.C/5.9
16	Carbon Steel AGST	1953	25x42	3685	154770	Out of Service	B.C/5.9
17	Carbon Steel AGST	1953	25x42	3665	153930	Out of Service	B.C/4.8
48	Carbon Steel AGST	1953	25x42	3676	154392	Out of Service	B.C/4.8
41	Carbon Steel AGST	1962	40x48	10811	454062	Storm Water	B.C/5.9
		1913	25x30	2643	111006	Out of Service	B.C/5.9
43 45	Carbon Steel AGST	1960	60x48	24365	1023330	Storm Water	B.C/5.9
	Carbon Steel AGST	1920	35x36	5973	250866	Out of Service	B.C/5.9
47	Carbon Steel AGST			7216	303072	Storm Water	B.C/5.10
48	Carbon Steel AGST	1930	35x42	14758	619836	Storm Water	B.C/5.10
49	Carbon Steel AGST	1930	50x42				B.C/5.10
50	Carbon Steel AGST	1930	50x42	14757	619794	Storm Water	
52	Carbon Steel AGST	1930	50x42	14921	626682	Out of Service	B.C/5.10
53	Carbon Steel AGST	1930	50x42	14871	624582	Out of Service	B.C/5.10
54	Carbon Steel AGST	1935	50x42	14729	618618	Out of Service	B.C/5.10
56	Carbon Steel AGST	1922	35x40	6935	291270	Out of Service	B.C/5.10
57	Carbon Steel AGST	1922	35x40	6935	291270	Out of Service	B.C/5.10
65	Carbon Steel AGST	1939	50x42	14757	619794	Out of Service	B.C/6.11
69	Carbon Steel AGST	1945	60x42	21284	893928	130 VIS. LPSN	B.C/6.11
71	Carbon Steel AGST	1951	20x30	1672	70224	Out of Service	B.C/6.12
72	Carbon Steel AGST	1951	20x30	1672	70224	Out of Service	B.C/6.12
73	Carbon Steel AGST	1951	20x30	1672	70224	Idle	B.C/6.12
76	Carbon Steel AGST	1969	30x32	4000	168000	West Side Separator	B.C/6.12
77	Carbon Steel AGST	1969	80x50	45600	1915200	West Side Separator	B.C/6.12
78	Carbon Steel AGST	1957	(a)	60	2520	West Side Sep. Chem. Inj.	B.C/6.12
30	Carbon Steel AGST	1950	20x42	2332	97944	Out of Service	B.C/6.11
31	Carbon Steel AGST	1950	25x42	3670	154140	Refined Wax	B.B/6.11
82	Carbon Steel AGST	1950	25x42	3670	154140	Refined Wax	B.B/6.11
83	Carbon Steel AGST	1945	40x42	9425	395850	Refined Wax	B.B/6.11
84	Carbon Steel AGST	1945	24x42	3704	155568	Refined Wax	B.B/6.11
85	Carbon Steel AGST	1945	40x42	9425	395850	Out of Service	B.B/6.11
86	Carbon Steel AGST	1945	25x42	3704	155568	Out of Service	B.B/6.11
88	Carbon Steel AGST	1945	25x42	3704	155568	Refined Wax	B.B/6.11
91	Carbon Steel AGST	1963	40x48	10800	453600	Refined Wax	B.B/6.11

			314 08 7 - A 37 8 -	Approx			Page 6 of
-	August .	V2.	Tank Dimensions	—Сар	acity-		
Tank Number	Tank Type	Year Built	(Diameter x height in feet)	(Barrels)	(Gallons)	Tank Content	Plant Grid Location (Block Number)
UBE OIL AR	EA (CONT.)						
592	Carbon Steel AGST	1963	30x48	6100	256200	Refined Wax	B.B/6.11
593	Carbon Steel AGST	1963	40x48	10800	453600	Refined Wax	B.B/6.12
594	Carbon Steel AGST	1963	30x48	6100	256200	Refined Wax	B.B/6.12
95	Carbon Steel AGST	1961	25x48	4199	176358	Out of Service	B.B/6.12
96	Carbon Steel AGST	1961	25x48	4205	176610	Out of Service	B.B/6.12
97	Carbon Steel AGST	1961	25×48	4200	176400	Out of Service	B.B/6.12
98	Carbon Steel AGST	1961	25x42	4197	176274	Out of Service	B.B/6.12
99	Carbon Steel AGST	1961	25×48	4198	176316	Out of Service	B.B/6.12
11	Carbon Steel AGST	1961	25x48	4219	177198	Out of Service	B.B/7.13
12	Carbon Steel AGST	1961	25x48	4217	177114	Slop Oil & Miscellaneous Liquid Waste	B.B/7.13
13	Carbon Steel AGST	1961	25x48	4223	177366	Out of Service	B.B/7.13
14	Carbon Steel AGST	1961	25x48	4217	177114	Out of Service	B.B/7.13
15	Carbon Steel AGST	1961	25x48	4221	177282	10, 10, 17 (2, 17.16.)	
16	Carbon Steel AGST	1961	25x48	4220	177240	Out of Service	B.B/7.13
						Slop Oil & Miscellaneous Liquid Waste	B.B/7.13
17	Carbon Steel AGST	1951	25x48	4220	177240	Out of Service	B.B/7.13
IER NO. 1 AF	REA						
No tanks.							
NO. 2 TANK F	ELD						
1001	Carbon Steel AGST	1955	150x50	157449	6612858	#2 Fuel	D.G/3.5
002	Carbon Steel AGST	1955	150x50	157449	6612858	#2 Fuel	E.H/3.5
003	Carbon Steel AGST	1955	150x50	157441	6612522	#2 Fuel	E.I/3,5
004	Carbon Steel AGST	1955	150x50	157437	6612354	#2 Fuel	F.J/3.5
005	Carbon Steel AGST	1955	150x50	157447	6612774	#2 Fuel	D.G/3.6
006	Carbon Steel AGST	1955	150x50	157455	6613110	Out of Service	D.G-E.H/3.6
007	Carbon Steel AGST	1955	150x50	157410	6611220	#2 Fuel	E/3.6
800	Carbon Steel AGST	1955	150x50	157397	6610674	#2 Fuel	E.I-F.J/3.6
SPHALT PLA	NT AREA						
04	Carbon Steel AGST	1957	75x48	38254	1606668	AC-20	G.M-H.N/5.9
27	Carbon Steel AGST	1957	20x40	2251	94542	MC-30	E.V4.7
28	Carbon Steel AGST	1957	25x40	3517	147714	MC-250	E.1/4.7
29	Carbon Steel AGST	1957	20x40	2251	94542	MC-70	E.1/4.7
30	Carbon Steel AGST	1957	20x40	2251	94542	7052 QD Asphalt	E.1/4.7
31	Carbon Steel AGST	1957	25x40	3517	147714	RC-250	E.1/4.7
32	Carbon Steel AGST	1957	25x40	3517	147714	7057 QD Asphalt	E.I/4.7
33	Carbon Steel AGST	1957	20x40	2251	94542	7037 QD Asphalt	F.J/4.7
34	Carbon Steel AGST	1957	25×40	3517	147714	RC-70	F.J/4.7
35	Carbon Steel AGST	1957	10x32	440	18480	7060	F.J/4.7
36	Carbon Steel AGST	1957	10x32	440	18480	7060	F.J/4.7
37	Carbon Steel AGST	1957	10x32	440	18480	7060	F.J/4.7
38	Carbon Steel AGST	1957	10x32	440	18480	MC-30	F.J/4.7
		1001				74.00	E.I/4.7

Pag		

	Tank Type		Tank Dimensions	Appro			
Tank		Year	(Diameter x height	——Cap	acity	Tout Contact	and a market transfer
Number		Built	in feet)	(Barrels)	(Gallons)	Tank Content	Plant Grid Location (Block Number)
SPHALT PL	ANT AREA (CONT.)						
942	Carbon Steel AGST	1957	20x40	2251	94542	7060	F.J/4.7
43	Carbon Steel AGST	1957	25x40	3517	147714	7037	F.J/4.7
50	Carbon Steel AGST	1960	60×48	24227	1017534	AC-20	F.K/4.8
55	Carbon Steel AGST	1948	60x48	23989	1007538	Out of Service	G.M/5.9
956	Carbon Steel AGST	1948	25x42	21269	893298	AC-20	G.W5.9
59	Carbon Steel AGST	1948	25×42	3678	154476	160/180 EMFLUX	E.1/4.7
60	Carbon Steel AGST	1948	25x42	3686	154812	AC-5	E.V4.7
61	Carbon Steel AGST	1948	25x42	3681	154602	AC-20	E.1/4.7
62	Carbon Steel AGST	1948	25x42	3693	155106	AC-10	E.I/4.7
63	Carbon Steel AGST	1948	25x42	3669	154098	Out of Service	E.I/4.8
64	Carbon Steel AGST	1948	25x42	3683	154686	AC-5	E.I/4.8
65	Carbon Steel AGST	1948	25x42	3683	154686	AC-20	E.I/4.8
66	Carbon Steel AGST	1948	25x42	3683	154686	AC-10	E.V4.8
67	Carbon Steel AGST	1957	20x40	2235	93870	AC-10	E.V4.8
68	Carbon Steel AGST	1957	20x40	2226	93492	EXXPRINT 990	F.J/4.8
69	Carbon Steel AGST	1960	20x40	2232	93744	7107 Rooters Flux	F.J/4.8
70	Carbon Steel AGST	1957	20x40	2234	93828	160/180 EMFLUX	F.J/4.7
71	Carbon Steel AGST	1957	10x32	2229	93618	LSFO	F.J/4.7
72	Carbon Steel AGST	(a)	(a)	(a)	(a)	Out of Service	F.J/4.7
	Carbon Steel AGST	1960	10x32	433	18186	EXXPAVEHP-60	F.J/4.7
73	Carbon Steel AGST	1960	10x32	432	18144	AC-20	F.J/4.7
		1960	10x32	432	18144	EXXPAVEHP-60	F.J/4,7
75	Carbon Steel AGST			2620	110040	Kerosene	H.G/4.7
86	Carbon Steel AGST	1924	25x30				
987	Carbon Steel AGST	1938	25x30	2625	110250	Varsol 18	H.G/4.7
88	Horizontal Drum	(a)	10x25	349	14658	Cutback Naptha	H.N/4.7
90	Carbon Steel AGST	1934	7'10-1/2x12'9	115	4830	1419 Ind. Oil	AT CM// B
93	Carbon Steel AGST	1959	25x40	3498	146916	NBH	G.W4.8
VAL NOITALVA	GAS TANK FIELD						
009	Carbon Steel AGST	1957	110x56	96324	4045608	Out of Service	F/3.6
010	Carbon Steel AGST	1957	75x56	44625	1874250	Toluene	F.K/3.6
011	Carbon Steel AGST	1957	75x56	44611	1873662	Kerosene	F.K/3.6
012	Carbon Steel AGST	1957	50x56	19678	826476	Heptane	G,L/3.6
013	Carbon Steel AGST	1957	60x56	28512	1197504	Hexane	G.L/3.6
014	Carbon Steel AGST	1957	100x56	79501	3339042	Out of Service	G.L/3.6
015	Carbon Steel AGST	1957	40x56	12592	528864	Out of Service	G.M/3.6
016	Carbon Steel AGST	1957	40x56	12596	529032	Cutback Naptha	G.M/3.6
017	Carbon Steel AGST	1957	75x56	44625	1874250	AVGAS	F.K/3
	Carbon Steel AGST	1957	75x56	44625	1874250	260 Diesel	F.K/3
018	A STATE OF THE STA	1857	7 3 8 3 6	7-020		Fee Steam	3 2 7 7
CHEMICAL PL	ANT AREA						
30	Carbon Steel AGST	1959	10x32	440	18480	Out of Service	F.J/4.8
731	Carbon Steel AGST	1959	10x32	440	18480	Out of Service	F.J/4.8
732	Carbon Steel AGST	1959	10x32	440	18480	Out of Service	F.J/4.8
733	Carbon Steel AGST	1959	10x32	440	18480	Out of Service	F.J/4.8

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			4.42.	Approx			Page 8	
Touls	Total	V	Tank Dimensions	——Cap	acity—	2.0.2	and a survey of the	
Tank Number	Tank Type	Year Built	(Diameter x height in feet)	(Barrels)	(Gallons)	Tank Content	Plant Grid Location	
, diribei		Cunt	111 1001)	(Darreis)	(Galiotie)		(Block Number)	
HEMICAL	PLANT AREA (CONT.)							
734	Carbon Steel AGST	1959	10/24	329	13818	Out of Service	F.J/4.8	
35	Carbon Steel AGST	1959	10x24	329	13818	Aromatic 150	F.J/4.8	
36	Carbon Steel AGST	1959	10x24	329	13818	Oil Flush	F.J/4.8	
37	Carbon Steel AGST	1959	10x24	329	13818	Out of Service	F.J/4.8	
38	Carbon Steel AGST	1959	10x24	329	13818	Vinyl Acetate	F.J/4.8	
39	Carbon Steel AGST	1961	10x24	329	13818	Out of Service	F.J/4.8	
40	Multi-Compartment AGST	1955	12x12*	238	9996	FRX Rundown	F.J/4.8	
40	Multi-Compartment AGST	1955	12x12**	238	9996	FRX Rundown	F.J/4.8	
40	Multi-Compartment AGST	1955	12x12***	238	9996	FRX Rundown	F.J/4.8	
41	Carbon Steel AGST	1953	10x24	329	13818	ODSA (82759)	F.J/4.8	
42	Carbon Steel AGST	1967	10x32	438	18396	83555	F.J/4.8	
43	Carbon Steel AGST	1967	15x32	990	41580	PIBSA	F.J/4.8	
44	Fiberglass Reinforced Plastic	(a)	12x18	333	14000	(a)	F.J/4.8	
45	Fiberglass Reinforced Plastic	(a)	12x18	333	14000	(a)	F.J/4.8	
46	HAUEG 41	(a)	12x18	333	14000	(a)	F.J/4.8	
48B	Carbon Steel AGST	1960	12x20	479	20118	Out of Service	F.J/4.8	
49	Carbon Steel AGST	1961	10x30	440	18480	Out of Service	F.J/4.8	
50	Carbon Steel AGST	1962	15x30	902	37884	81418	F.J/5.9	
51	Carbon Steel AGST	1962	15x30	924	38808	ATF VI	F.J/5.9	
52	Carbon Steel AGST	1962	15x30	924	38808	ATF VI	F.J/5.9	
53	Carbon Steel AGST	1962	15x30	924	38808	ATF VI	F.J/5.9	
60	Carbon Steel AGST	1947	12024	471	19782	ATF	F.J/5.9	
61	Carbon Steel AGST	1947	10x26	381	16002	ATF	F.J/5.9	
62	Carbon Steel AGST	1949	15x19	579	24318	80831	F.J/5.9	
64	Carbon Steel AGST	1943	12x24	471	19782	ATF	F.J/5.9	
65	Carbon Steel AGST	1949	10/24	381	16002	ATF	F.J/5.9	
66	Carbon Steel AGST	1949	15x19	579	24318	ATF	F.J/5.9	
68	Carbon Steel AGST	1946	7x12	79	3318	Cleaning Fluid	F.J/5.9	
69	Carbon Steel AGST	1946	7x12	79	3318	Cleaning Fluid	F.J/5.9	
70	Carbon Steel AGST	1965	10x24	326	13692	Out of Service	F.J/5.9	
71	Carbon Steel AGST	1965	10x24	329	13818	Out of Service	F.J/5.9	
73	Carbon Steel AGST	1949	24×20	1562	65604	ECA4360	F.J/5.9	
76	Carbon Steel AGST	1949	10x24	379	15918	Necton	F.J/5.9	
77	Carbon Steel AGST	1966	20x30	1648	69216	Mercon Dextron	F.J/5.9	
78	Carbon Steel AGST	1940	20x15	867	36414	Finished CuO	F.J/5.9	
79	Carbon Steel AGST	1922	10x24	288	12096	ATF	F.J/5.9	
307		1940	20x15	869	36498	N37 Flushes	F.J/5.9	
81 83	Carbon Steel AGST	1966	15x(a)*	221	9282	Mark 5072	F.J/5.9	
E 36.	Multi-Compartment AGST	1966	15x(a)**	224	9408	Same as 80039	F.J/5.9	
83	Multi-Compartment AGST		15x(a)***	221	9282	OLDA 269R	F.J/5.9	
83	Multi-Compartment AGST	1966		355	14910	Hitec E611	F.J/5.9	
84	Carbon Steel AGST	1947	12x18		14994	Necton	F.J/5.9	
85	Carbon Steel AGST	1949	12x18	357		ATF	F.J/5.9	
86	Carbon Steel AGST	1938	12/24	474	19908		F.J/5.9	
87 88	Carbon Steel AGST	1959 1928	12x18 15x24	336 783	14112 32886	ATF DHP (91730)	F.J/5.9	
88 89	Carbon Steel AGST Carbon Steel AGST	1950	15x24	743	31206	Slop Oil	F.J/5.9	

788 Carbo 789 Carbo See footnotes on last page.

				Approx	dmate		Page 9 of		
			Tank Dimensions		acity				
Tank	Tank	Year	(Diameter x height			Tank Content	Plant Grid Location		
Vumber	Туре	Built	in feet)	(Barrels)	(Gallons)	Tarik Corkork	(Block Number)		
HEMICAL	PLANT AREA (CONT.)								
	A A A A A A A	93.26	6.00		20.3				
95	Fiberglass Reinforced Plastic	1975	8x12	107	4512	Slop Oil	F.K./5.9		
96	(a)	(a)	(a)	(a)	(a)		F.K./5.9		
97	Carbon Steel AGST	1977	10x40	360	23500	Effluent	F.K./5.9		
98	Carbon Steel AGST	1955	15x42	1322	55520	Effluent	F.K./5.9		
99	Carbon Steel AGST	1955	15x42	1322	55520	Effluent	F.K./5.9		
00	Carbon Steel AGST	1959	12x36	719	30198	LOFI	E.1/5.9		
01	Carbon Steel AGST	1959	12x36	719	30198	LOFI	E.1/5.9		
02	Carbon Steel AGST	1959	12/36	719	30198	LOFI	E.I/5.9		
03	Carbon Steel AGST	1959	12x36	719	30198	DWA Work-Off	E.I/5.9		
04	Carbon Steel AGST	1959	10x24	331	13902	Out of Service	E.U5.9		
05	Carbon Steel AGST	1959	10x24	331	13902	Out of Service	E.1/5.9		
06	Carbon Steel AGST	1959	10x24	331	13902	Necton	E.V5.9		
07	Carbon Steel AGST	1959	10x24	331	13902	HFFI (83623)	E.V5.9		
09	Carbon Steel AGST	1959	10x24	331	13902	HFFI (83612)	E.I/5.9		
10	Carbon Steel AGST	1966	10x18	245	10290	Heating Oil	E.1/5.9		
11	Carbon Steel AGST	1959	24x30	2329	97818	Out of Service	E.1/5.9		
12	Carbon Steel AGST	1958	20x30	1662	69804	150 Solvent Neutral	E.I/5.9		
13	Carbon Steel AGST	1958	20x30	1662	69804	Dewaxing Aid	E.I/5.9		
14	Carbon Steel AGST	1959	20x30	1662	69804	Dewaxing Aid	E.I/5.9		
15	Carbon Steel AGST	1959	20x30	1662	69804	LOFI (80136)	E.V5.9		
16	Carbon Steel AGST	1969	20x30	1662	69804	ECA 9587 LOFI	E.1/5.9		
40	Carbon Steel AGST	1968	24x24	1879	78918	Mercon Dextron	F.K/4.B		
41	Carbon Steel AGST	1968	24×24	1879	78918	Mercon Dextron	F.K/4.8		
42	Carbon Steel AGST	1968	15x24	736	30912	ATF	F.K/4.8		
43	Carbon Steel AGST	1968	15x24	736	30912	Mercon Dextron	F.K/4.8		
44	Carbon Steel AGST	1974	25x32	2536	106512	Mercon Dextron	F.K/4.8		
45	Carbon Steel AGST	1974	25x32	2536	106512	Mercon Dextron	F.K/4.8		
50	Carbon Steel AGST	1968	18/24	1057	44394	Necton	F.K/4.B		
			15:24	738	30996	ATF	F.K/4.8		
51	Carbon Steel AGST	1968	10x24	324	13608	ATF	F.K/4.8		
52	Carbon Steel AGST	1968			13608	Necton	F.K/4.8		
53	Carbon Steel AGST	1968	10x24	324		ATF	F.K/4.8		
54	Carbon Steel AGST	1968	10x24	324	13608		F.K/4.8		
55	Carbon Steel AGST	1971	12x18	340	14280	Amoco 6811			
56	(a)	(a)	(a)	290	12180	ATF	F.K/4.8		
61	Carbon Steel AGST	1974	12x24	476	19992	ECA 8864/DHP	F.K/4.8		
62	Carbon Steel AGST	1951	10x24	333	13986	Tomah Amine	F.K/4.8		
63	Carbon Steel AGST	1950	5x15	57	2394	Plexol 305	F.K/4.8		
70	Carbon Steel AGST	1968	10x18	238	9996	Van Lube/FN31664	F.K/4.8		
71	Carbon Steel AGST	1964	8x18	157	6594	E4814	F.K/4.8		
372	Stainless Steel AGST	1964	8x18	157	6594	Out of Service	F.K/4.8		
73	Carbon Steel AGST	1964	8x18	157	6594	ECA 9324/4999	F.K/4.8		
74	Carbon Steel AGST	1964	8x18	157	6594	ECA 4493	F.K/4.8		
75	Carbon Steel AGST	1968	8x18	157	6594	ECA 5087	F.K/4.8		
76	Carbon Steel AGST	1964	10x24	329	13818	PX 15	F.K/4.8		
80	Carbon Steel AGST	1969	30x32	3964	166488	ECA 5025	F/4.8		

Page	41	n	 4	4

				Approx			
Tank	Total	G. Service	Tank Dimensions	—Cap	acity——		
Tank Number	Tank Type	Year Built	(Diameter x height in feet)	(Barrels)	(Gallons)	Tank Content	Plant Grid Location (Block Number)
O. 3 TANK F	TELD						
901	Carbon Steel AGST	1968	60x50	25418	1067556	Water	H/5.9
902	Carbon Steel AGST	1957	60x48	24447	1026774	LSFO	H.O/5
903	Carbon Steel AGST	1957	60x48	24490	1028580	LSFO	H/5
16	Carbon Steel AGST	1951	120x47	97080	4077360	PFF	F/5.10
17	Carbon Steel AGST	1965	120x48	98109	4120578	AC-5	F.K-G.U5.10
18	Carbon Steel AGST	1957	120x56	114619	4813998	PFF	G/5.10
19	Carbon Steel AGST	1957	120x56	114680	4816560	Out of Service	F/6
20	Carbon Steel AGST	1957	120x56	114626	4814292	MTBE	F.K-G.L/6.11
21	Carbon Steel AGST	1957	120x56	114604	4813368	Out of Service	G/6.11
SENERAL TA	NK FIELD						
053	Carbon Steel AGST	1925	120x42	85159	3576678	Storm Water	I.Q-J.R/1.2
054	Carbon Steel AGST	1925	120x42	85254	3580668	Out of Service	I.Q-J.R/2.3
055	Carbon Steel AGST	1925	120x42	85297	3582474	Bayway PGO	I.Q-J.R/2.4
056	Carbon Steel AGST	1925	120x42	85281	3581802	Bayway PGO	J/2.4
057	Carbon Steel AGST	1925	120x42	85242	3580164	Out of Service	J/2.3
058	Carbon Steel AGST	1925	120x42	85219	3579198	Out of Service	J.S-K.T/2.3
060	Carbon Steel AGST	1958	150x50	160826	6754692	TURBO	H.O-I.P/3.5
061	Carbon Steel AGST	1958	150x50	160826	6754692	TURBO	V3.5
062	Carbon Steel AGST	1958	150x50	160836	6755112	Cattar/HAFO	1.0/3.5
063	Carbon Steel AGST	1958	150x50	160732	6750744	Cattar/HAFO	J.R/3.5
064	Carbon Steel AGST	1958	150x50	160740	6751080	260 Diesel	J.S/3.5
071	Carbon Steel AGST	1969	150x56	170000	7140000	Water	H.O-I.P/2.4
072	Carbon Steel AGST	1969	150x56	170000	7140000	Bayway PGO	H/2
073	Carbon Steel AGST	1969	150x56	170000	7140000	Bayway PGO	H.O-I.P/2.3
SOLVENT TA	NK FIELD						
024	Carbon Steel AGST	1966	10x12	170	7140	Idle	K.T/4.7
1025	Carbon Steel AGST	1967	70x48	33000	1386000	Xylene	t.Q/3.6
026	Carbon Steel AGST	1923	75x42	33256	1396752	Varsol 1	I.Q/3.6
027	Carbon Steel AGST	1923	75x42	33256	1396752	Idle	J.R/3.6
028	Carbon Steel AGST	1923	75x42	33281	1397802	Aromatic 100	J/3.6
029	Carbon Steel AGST	1923	40x42	33281	1397802	Varsol 18	J.S/3.6
030	Carbon Steel AGST	1959	40x48	10768	452256	L.O.P.S.	K.T/3.6
031	Carbon Steel AGST	1959	40x48	10770	452340	EXXPRINT 588D	K.T/3.6
032	Carbon Steel AGST	1962	40x48	10767	452214	Norpar 15	K.T/3.6
033	Carbon Steel AGST	1962	40x48	10725	450450	Isopar L	K.T/4.7
034	Carbon Steel AGST	1961	40x48	10766	452172	2429 Naptha	K.T/4.7
035	Carbon Steel AGST	1961	40x48	10767	452214	Norpar 12	K.T/4.7
036	Carbon Steel AGST	1961	40x48	10725	450450	EXXSOL D110	J.S/4.7
037	Carbon Steel AGST	1968	50x48	10700	449400	Aromatic 150	J.S/4.7
046	Carbon Steel AGST	1951	15x24	760	31920	Aromatic 200	K.T/4.7
047	Carbon Steel AGST	1928	60x42	21307	894894	Isopar G	K.T/4.7
1048	Carbon Steel AGST	1962	40x48	10727	450534	HAN	K.T/4.7
049	Carbon Steel AGST	1961	50x48	16752	703584	Isopar H	K.T/4.7

_		Approximate						
	Tank		Tank Dimensions		acity—			
Tank		Year	(Diameter x height			Tank Content	Plant Grid Location	
Number	Туре	Built	in feet)	(Barrels)	(Gallons)		(Block Number)	
LOW SULF	UR TANK FIELD							
1065	Carbon Steel AGST	1967	150x56	170000	7140000	RSFO	J.R/4.7	
066	Carbon Steel AGST	1967	150x56	170000	7140000	Out of Service	J/4.7	
1067	Carbon Steel AGST	1967	150x56	170000	7140000	Cattar/HAFO	J.R/4.8	
1068	Carbon Steel AGST	1968	150x56	170000	7140000	RSFO	J.S/4.8	
1069	Carbon Steel AGST	1969	150x56	170000	7140000	Bayway PGO	K.T/4.8	
1070	Carbon Steel AGST	1969	150x56	170000	7140000	Bayway PGO	1,0/4	
PIERS AND	EAST SIDE TREATMENT AREA							
659	Carbon Steel AGST	(a)	(a)	(a)	(a)	ldie	L.W/4.8	
996	Fiberglass Reinforced Plastic	1980	14x12	330	13860	Out of Service (APH)	L.W/3.6	
997	Fiberglass Reinforced Plastic	1980	14x12	330	13860	Calgon	L.W/3.6	
1097	Carbon Steel AGST	1991	13x24	567	23830	Recycle Oil	L.W/3.6	
1098	Carbon Steel AGST	1964	20x24	2562	1076047	Recycle Oil	L.W/3.6	
1099	Carbon Steel AGST	1964	20x24	2562	1076047	Recycle Oil	L.W/3.6	
1100	Carbon Steel AGST	1947	15x18	576	24192	DEMAR	L.W/3.6	
1101	Carbon Steel AGST	1956	12x12	244	10248	XD-3XTRA-40	L.W/3.6	
OMESTIC	TRADE AREA							
1051	Carbon Steel AGST	1966	40x50	11200	470400	Idle (Domestic Trade)	H.N/3.6	
MISCELLA	NEOUS AREAS							
994	Carbon Steel AGST	1949	25x40	3494	146748	Out of Service (CBH)	E/5.9	
995	Carbon Steel AGST	1949	25x40	3494	146748	Out of Service (CBH)	E.1/5	
April 1980			0.0	1 Common		ODIL OL Hillston	E 1/E 10	

45320

1903440

CBH Storm Water

E.I/5.10

All tanks that are out of service or idle are empty.

Carbon Steel AGST

1949

90x48

Top compartment.
Middle compartment. ** *** Bottom compartment. Unknown.

998

(a) AGST Aboveground storage tank.

ECA Exxon Chemical Americas. Asphalt tank field. AT AVGAS Aviation gas.

APPENDIX L

HAZARDOUS SUBSTANCE INVENTORY

APPENDIX L

HAZARDOUS SUBSTANCE INVENTORY

This section was constructed to provide a complete and current inventory, description, and location of hazardous substances and wastes generated, manufactured, refined, transported, treated, stored, handled, or disposed above or below ground at the Site, as requested in the November 27, 1991 Administrative Consent Order (ACO) Appendix B, Section IIB, Item 12.

The most current inventory of hazardous chemicals known to be in the workplace is a list, compiled by Exxon Company, U.S.A., in its August 1991 "Bayonne Plant Hazard Communication Notebook." This inventory list is attached.

				HAZARD WARNING	PLANT		
PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	CODE	LOCATION	FURINO	
		Acidless Tallow	Acme Hardesty	N/A	SPECIALTIES		
		#105 Oleic Acid Acetylene	Acme Hardesty Airco Welding	N/A	SPECIALTIES		
		Argon	Airco Welding		SPECIALTIES		
		Alox 1689	Alox Corp.	N/A	SPECIALTIES	d.	
		Alox 2191E-30 Alox 2291E	Alox Corp.	N/A N/A	SPECIALTIES		
		Arsenal Herbicide	American Cyanamid	07.0	SPECIALTIES		
		Kling Beta-Lv	AZS Corp.		ASPHALT		
		Barcrobe Bio Barrier Pine D	Barrier Ind. Barrier Ind.		SPECIALTIES		
		Hycoty Floor Finish	Barrier Ind.		SPECIALTIES		
		Maverick	Barrier Ind.		SPECIALTIES		
		P.S.B. Polymer Spray Buff	Barrier Ind.		SPECIALTIES		
		Reikem 99 Reikem "0"	Barrier Ind. Barrier Ind.		SPECIALTIES		
		Super Bowlaway	Barrier Ind.		SPECIALTIES		
		Super Strip	Barrier Ind.	con.	SPECIALTIES		
		340-2 Antifreeze Atlas/Exxon Antifreeze	BASF Corp BASF Corp	V8 V8	SPECIALTIES		
		Esso Antifreeze	BASF Corp	¥8	SPECIALTIES		
		#59A-3 White Poly c/c 50/1 ratio	Blen-Col. Inc.	N/A	SPECIALTIES		
		4690 Red c/c 33/1 Ratio OLOA 269R Oronite Lube Oil Additive	Blen-Col, Inc. Chevron	N/A CE3	SPECIALTIES SPECIALTIES		
		OLOA 2805A	Chevron	N/A	SPECIALTIES		
		OLOA 2990 Oranite Lube Oil Additive	Chevron	CS2	SPECIALTIES		
		OLOA 9725CX OLOA 97235CK Oronite Lube Oil Additive	Chevron Chevron	CEI	SPECIALTIES		
		Irganox L 125	Ciba-Geigy	N/A	SPECIALTIES		
		Irganox L 127	Ciba-Geigy	N/A	SPECIALTIES		
		Irganox L 135 Irganox 1076	Ciba-Geigy Ciba-Geigy	N/A N/A	SPECIALTIES		
		Reomet 38	Ciba-Geigy	W7	SPECIALTIES		
		Reomet 39 Citgard 500 Motor Oil, SAE, 15W-40	Ciba-Geigy	W7	SPECIALTIES		
		Citgo A/W Hydraulic Oil 32	Citgo Petroleum Citgo Petroleum		SPECIALTIES SPECIALTIES		
		Citgo MP ATF. Dexron H/Mercon	Citgo Petroleum		SPECIALTIES		
		Citgo No. 2 Diesel Fuel Citgo No. 2 Fuel Oil	Citgo Petroleum Citgo Petroleum		SPECIALTIES SPECIALTIES		
		Citgo Premium Gear Oil (MP) 80W-90	Citgo Petroleum		SPECIALTIES		
		Citgo Tractor Hydraulic Fluid	Citgo Petroleum		SPECIALTIES		
		Citgo Unleaded Gasoline Boraxo Liquid Lotion Soap	Citgo Petroleum Dial Corp.		SPECIALTIES SPECIALTIES		
		Boraxo Powdered Hand Soap	Dial Corp.		SPECIALTIES		
		200 Fluid, 100 CST	Dow Corning	N/A	SPECIALTIES		
		200 Fluid, 350 CST 200 Fluid, 1,000 CST	Dow Corning Dow Corning	N/A N/A	SPECIALTIES SPECIALTIES		
		200 Fluid 12,500 CST	Daw Corning	N/A	SPECIALTIES	-	
		210H Fluid, 100 CS	Dow Carning	N/A	SPECIALTIES	2	
		FS-1265 Fluid, 300 CS Crystal Drano All Purpose Drain Opener	Dow Corning Drackett Prod	N/A	SPECIALTIES SPECIALTIES		
		Windex Glass Cleaner Blue	Drackett Prod		SPECIALTIES		
		Process 011 7	Drew Ind (Ashland Chem)	CE2	SPECIALTIES		
		Oil Blue B Liquid Dye Oil Red B Liquid	Dupont	DF1 DF8	SPECIALTIES SPECIALTIES		
		Tyzor TBT Titanate	Dupont	DF7	SPECIALTIES		
	C1	Naphtha	ECA	4/4	SPECIALTIES		
	Sample Sample	ECA 13073 ECA 13028	ECA ECA	N/A CE1	SPECIALTIES SPECIALTIES		
	10425	Ethylene Glycol	ECA	W8	SPECIALTIES		
	30702 30712	ECA 12834	ECA ECA	CE1	SPECIALTIES SPECIALTIES		
	30813	ECA 12846 ECA 11998	ECA	CEL	SPECIALTIES		
	30822	ECA 11700A	ECA	CE5	SPECIALTIES		
	31220	ECA 13934	ECA	CE3	SPECIALTIES SPECIALTIES		
	75010 77413	ACRA 500 Breaxit 413	ECA ECA	DC11	SPECIALTIES		
	79576	Breaxit 9576	ECA	DF6	SPECIALTIES		
	79810 80020	Jayfloc 810 Paraflow 149	ECA ECA	DC7 N/A	SPECIALTIES SPECIALTIES		
	80025	ECA 8835	ECA	N/A	SPECIALTIES		
	80047	ECA 9368	ECA	N/A	SPECIALTIES		

PRODUC	T FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
131624 55006 833060 333296 170011 170045 170206 170211 170225 170241 170225	80159 80384 80459 80464 80555 80557 80690 80955 81153 81159 81167 81286 81317 81320 81339 81358 81418 81605 81652 81655 81652 81655 81656 81910 81964 81990 82065 82161 82299 82610 82757 8231 83492 83449 83449 83543 83585 8391 91750 80955000 80955001 89720028	ECA 13112 Paratome 716 ECA 12822 ECA 12823 ECA 12828 ECA 12884 Paranox 24 Paranox 16 Paranox 205 Paraflow 385 ECA 9153 ECA 10017 ECA 9680 ECA 10010 Paranox 106 Paranox 105 ECA 10429 Paranox 400 ECA 10429 Paranox 480 ECA 100177 Paratone 816 Paranox 15 Paranox 26-1-59 ECA 10007 Paranox 15 Paranox 160 ECA 1224 Paranox 26-1-59 ECA 10007 Paranox 30 ECA 8509 Paranox 52 ECA 79310 Paranox 52 ECA 79310 Paranox 52 ECA 9349 Paranox 442 Paranox 36 ECA 9585 ECA 8991 Jayflex DINP Jayflex DIOP-E ECA 7955 Paraflow 385 Escorene H0 98560A Plastolein 93560A Bishydroxethyl Dimerate Emersol 260 Oleic Acid Ethyl Antioxidant 703 HiTec 4702 HiTec 370 HiTec 4702 HiTec 4702 HiTec 4702 HiTec 4702 HiTec 4702 HiTec 4702 HiTec 4701 HiTec 4863 HiTec (R) 005 Performance Additive Tetraethyl Lead Polybit & XCS Series Polymers Polymer Modified Asphalt Varsol 18 Karosene #6 Fuel 0.3% S Exx Print 990 Caloria HT 43 RC 70 CB Asphalt RC 250 CB Asphalt	ECA	N/A 333 CE3 N/A CE3 N/CE3 N/CE	SPECIALTIES SPECIA	
						-2-

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
170460 170520 170570 171070 171100 171190 171241 171250 171270 171311 171320 171520	07046 07052 07057 07107 07110 07119 07124 07125 07127 07131 07132 07152	PRODUCT DESCRIPTION 7046 OD Asphalt 7052 QD Asphalt 7057 QD Asphalt 7107 Roofers Flux 7110 Asphalt AC 2.5 Asphalt 180/180 Pen Emulsion Flux 140/160 Pen Emulsion Flux AC-5 Asphalt 7131 Roofers Flux 7132 Special Asphalt AC-10 Asphalt AC-10 Asphalt AC-10P Asphalt AC-20 Pasphalt AC-20P Asphalt AC-20P Asphalt AC-30P Asphalt AC-30P Asphalt AC-40 Additive Asphalt AC-40 Additive Asphalt AC-40 Additive Asphalt AC-50 CB Additive Asphalt AC-60 Additive Asphalt AC-70 CB Additive Asphalt AC-70 CB Additive Asphalt AC-70 CB Additive Asphalt AC-800 CB Additive Asphalt AC-90 Additive Asphalt	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA	DC5 DC4 DC4 C3 C3 C3 C3 C3 C3 C3	ASPHALT	
171540 171650 171680 171690 171770 171780 171850	07156 07168 07169 07177 07178 07185	AC-20 Asphalt AC-20 Asphalt AC-20 Asphalt Exxpave HP-50 AC-30 VA Additive Asphalt AC-30P Asphalt AC-40 Asphalt	EUSA EUSA EUSA EUSA EUSA EUSA EUSA	C3 C4 C3	ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT	
171860 171950 172010 172022 172041 172211	07186 07195 07201 07202 07204 07221	AC-40 Additive Asphalt 160/175 Special Asphalt RC 70 CB Additive Asphalt RC250 CB Additive Asphalt RC800 CB Additive Asphalt MC 70 CB Additive Asphalt	EUSA EUSA EUSA EUSA EUSA EUSA	C3 DF2 DF2 DF2 DF2	ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT ASPHALT	
172221 172241 173070 929215	07222 07224 07307 29215	MC 800 CB Additive Asphalt 7307 Shingle Saturant Naphtha with Benzene & Hexane Naphtha Cracked Gas Oil Aromatic Tar S-2 or Carbon Black Oil	EUSA EUSA EUSA EUSA EUSA EUSA EUSA	DC3 DC3 C3	ASPHALT ASPHALT ASPHALT FUELS FUELS FUELS	
111000 113000 113040	00029 00039 00040	(Process Gas 01) Virgin Gas 01 Unleaded Gasoline Tank Bottoms Leaded Gasoline Tank Bottoms Slop 011 Aviation Gasoline 80 Aviation Gasoline 100 LL Aviation Gasoline 100	EUSA EUSA EUSA EUSA EUSA EUSA EUSA	DEF3 DEF3 DEF3	FUELS FUELS FUELS FUELS FUELS FUELS FUELS FUELS	
120400 124000 124001 127020 127021 25000	00072 00073 00073 00079 00081 00290	Turbo Fuel A Jet Fuel Grade JP-4 Jet Fuel Grade JP-4 Jet Fuel Grade JP-8 Jet Fuel Grade JP-8 Jet Fuel JP-8 Jet Fue	EUSA EUSA EUSA EUSA EUSA EUSA	DC2 DEF3 DEF3	FUELS FUELS FUELS FUELS FUELS FUELS	
26009 30200 30202 30000 30201 040000 132544	00308 00380 00380 00380 00380 00400 00544	CORS MFPA Unleaded Reg Exxon Leaded - MTBE Exxon LR-Contains Min 11.0% MTBE Exxon Leaded Gasoline Exxon LR-Contains Min 12.7% MTBE M-85 Motor Oil SA4 Solvent	EUSA EUSA EUSA EUSA EUSA EUSA	DEF3 DEF3 DEF3 DEF3 DEF3	FUELS FUELS FUELS FUELS FUELS FUELS FUELS	
133540 133545 133551 133561 133562 133563	00562 00563	EXX-Print 588 D EXX-Print 189D	EUSA EUSA	N/A DC1	FUELS FUELS FUELS FUELS FUELS FUELS	
133568 133578 134584 134586 133586 133202 133242	00568 00578 00584 00586 00586 00590 00591	EXX-Print 380 Exxon-Liquid Candle Oil 584 Solvent Heptane RX Exxsol Heptane 2024 Maphtha 2429 Maphtha	EUSA EUSA EUSA EUSA EUSA EUSA EUSA	N/A N/A W2 DEF1 DEF1 DEF1 DF1	FUELS FUELS FUELS FUELS FUELS FUELS FUELS FUELS	
134592 135592 133593 133594 133598 133599 131601	00592 00592 00593 00594 00598 00599	592 Solvent Syntrel 350 Norpar 10 Mixed Solvent Interface Norpar 12 Norpar 13 601 Solvent	EUSA EUSA EUSA EUSA EUSA EUSA EUSA	W3 W3 DC1 DC1 DC1 DC1	FUELS FUELS FUELS FUELS FUELS FUELS FUELS FUELS	

PRODUCT	FORMULA	PRODUCT DESCRIPTION Hexane Isohexane Naphtha Heptane CF 195 Naphtha Laktane CF 195 Naphtha VM&P Naphtha 508 Paraffin Solvent Low Odor Paraffin Solvent Low Odor Paraffin Solvent Exxsol Hexane Norpar 15 1028 Naphtha Norpar 12 Special Norpar 13 Special Varsol 18 Varsol 18 Varsol 1 Odorless Mineral Spirits Varsol 3 Bayol 35 Isopar M Isopar K Isopar L Isopar E Isop	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
133130	00602	Hexane	EUSA	DEFZ	FUELS	
133602	00602 00603	Isohexane Naphtha	EUSA	DEF2 DEF1	FUELS	
133120 133604	00604	CE 105 Nachtha	EUSA EUSA	DEFI	FUELS	
133140	00605	Laktane	EUSA	DF3 DF1	FUELS	
133506	00605	CF 195 Naphtha	EUSA	DF3	FUELS	
133060	00607	VM&P Naphtha	EUSA	OF1	FUELS	
131708	00608 00608	508 Paraffin Solvent	EUSA	DC1 DC1	FUELS FUELS	
131608 135608	00608	Low Odor Paraffin Solvent	EUSA	DC1	FUELS	
133611	00611	Fyxed Hevane	EUSA	DC1 DEF2	FUELS	
133511 133512	00611 00612	Norpar 15	EUSA EUSA	N/A	FUELS FUELS	
133613	00613 00615 00616	1028 Naphtha	EUSA	DEF3	FUELS	
133615 133616	00615	Norpar 12 Special	EUSA	DC1	FUELS FUELS	
131624	00616	Varsol 18	EUSA EUSA	DC1	FUELS	
131624 131030 134628	00624 00627 00628	Varsol 1	EUSA	DCI	FUELS	
134628	00628	Odorless Mineral Spirits	EUSA EUSA	0C1 0C1 0C1 0C1 0C1	FUELS FUELS FUELS FUELS FUELS	
131043	00631 00635 00635 00635	Varsol 3	EUSA	DC1	FUELS	
133469 133468	00635	Bayor 35	EUSA	DC1	FUELS	
133467	00635	Isonar K	EUSA EUSA	DC1	FUELS	
133467 133645	00637 00639	Isopar L	EUSA	DC1	FUELS FUELS FUELS FUELS	
133639	00639	Isopar V	EUSA	N/A	FUELS	
133466 133642	00640	Isopar H	EUSA	DC1	FUELS	
133463	00642 00643	Isopar F	EUSA	DEF1 DF1	FUELS FUELS	
133464 132010 132020 132030	00644	Isopar G	EUSA	DC1	ELIEL C	
132010	00650	Toluene	EUSA	DF1	FUELS	
132020	00651	Xylene	EUSA	DF1	FUELS	
132030	00652	Aromatic 100	EUSA	DC1	FUELS	
132050	00653 00654	HAN 857	EUSA EUSA	DC1 DC1	FIFE	
132040 132050 132655	00655	Aromatic 200	EUSA	N/A	FUELS FUELS FUELS FUELS FUELS FUELS	
133658 133663	00658	Charcoal Lighter 125	EUSA	DC1	FUELS	
133663	00663 00673	Charcoal Lighter 120	EUSA	DC1 DC1	FUELS FUELS	
133680	00680	Exxsol D 80	EUSA	DC1	FUELS	
133581	00681	Exxsol D 100	EUSA	N/A	FUELS	
133686	00686	Exxsol D 110	EUSA	N/A	FUELS	
134686 133688	00686	686 Solvent	EUSA EUSA	N/A	FUELS	
55000	00700	Kernsene	EUSA	DEF3	FUELS	
59998 59999	00739	Interface/Emulsion	EUSA	DC2 DEF3 DEF3	FUELS	
59999	00739	Interface	EUSA	DEF3	FUELS	
229999	00739	Slop 011	EUSA	DEF3	FUELS	
63010 72700	00753 00787	Free Discal 2	EUSA EUSA	DC2 DC2	FUELS	
72789	00789	Marine Gas 011	EUSA	DC2	FUELS	
75001	00804	Marine Diesel Oil	EUSA	DC2	FUELS	
86883	00883	Process Gas 011	EUSA		FUELS	
82444 82200	00908 00920	Intermediate Fuel #420 Intermediate Fuel #40	EUSA EUSA	DC3 DC3	FUELS FUELS	
82440	00921	Intermediate Fuel #380	EUSA	DC3	FUELS	
82205	00923	Intermediate Fuel #30	EUSA	DC3	FUELS	
82210	00924	Intermediate Fuel #60	EUSA	DC3	FUELS	
82230 82320	00925	Intermediate Fuel #80	EUSA	DC3	FUELS	
82330	00926 00927	Intermediate Fuel #100 Intermediate Fuel #120	EUSA EUSA	DC3	FUELS	
82410	00928	Intermediate Fuel #150	EUSA	DC3 DC3	FUELS	
82420	00929	Intermediate Fuel #180	EUSA	DC3	FUELS	
82450	00930	Intermediate Fuel #240	EUSA	DC3	FUELS	
82931 82470	00931 00932	Intermediate Fuel #280 Intermediate Fuel #320	EUSA EUSA	DC3	FUELS FUELS	
86024	00932	66 Fuel 2.1% S	EUSA	DC3	FUELS	
86061	00942	#6 Fuel 0.3% S	EUSA	DC3	FUELS	
86060	00948	6 Fuel Stock	EUSA	DC3	FUELS	
86045 86020	00950	46 Fuel 1.0% S	EUSA	DC3 DC3	FUELS	
86025	00951 00958	#6 Fuel 2.9% S	EUSA EUSA	DC3	FUELS	
86064	00962	Heavy Aromatic Fuel 011	EUSA	DC3	FUELS	
86037	00968	#6 Fuel 3.5% S (8FD)	EUSA	DC3	FUELS	
86029	00969	#6 Fuel 2.8% S	EUSA	DC3	FUELS	

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION FURINO
86026	00973	#6 Fuel 1.5% S #6 Fuel 2.4% S #6 Fuel 2.5% S Unbranded 100 Solvent Neutral	EUSA EUSA EUSA	DC3	FUELS
86975	00975	16 Fuel 2.4% S	EUSA	DC3	FUELS
86978	01465	Unbranded 100 Solvent Neutral	FIISA	DC3	FUELS FUELS
311465 211730	01730	XD-3 30	EUSA	N/A	FUELS
212053	02053	XD-3 30	EUSA	N/A	FUELS
362216	02216	DE-MAR HDX	EUSA	H/A	FUELS
352217 362225	02217 02225	DE-MAR 13	EUSA	N/A CS1	FUELS
902473	02473	XD-3 Extra 40	FUSA	CS1 N/A	FUELS FUELS
333060	03060	EXX-Print 990	EUSA	C3	FUELS
215700	03064	EXX-Print 776	EUSA	N/A	FUELS
315708 170021	05708 07002	PC 250 CR Acabalt	EUSA	N/A DF2	FUELS FUELS
171070	07107	7107 Roofers Flux	EUSA	C3	FUELS
171250	07125	140/160 Pen Emulsion Flux	EUSA	C3 C3	FUELS
171660	07166	AC-20 Asphalt	EUSA	C3	FUELS
171850 929215	07185 29215	Nanhtha with Resience & Heyana	EUSA	C3	FUELS
131624	00624	Varsol 18	FUSA	DC1	FUELS SPECIALTIES
133469	00635	Bayol 35	EUSA	DC1	SPECIALTIES SPECIALTIES
133468	00635	Isopar H	EUSA	DC1	SPECIALTIES
132050 372034	00654 01123	MAN 857	EUSA	DC1 N/A	SPECIALTIES SPECIALTIES SPECIALTIES
372038	01125	Spinesstic 22	FIISA	N/A	SPECIALTIES
341150	01125 01150	Humble Hydraulic H 32	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES
341151	01151	Humble Hydraulic H 46	EUSA	N/A	SPECIALTIES
341152 341153	01152 01153	Humble Hydraulic H 68	EUSA	N/A	SPECIALTIES
341160	01160	Humble Hydraulic M 32	FUSA	N/A N/A	SPECIALTIES SPECIALTIES SPECIALTIES
341161	01161	Humble Hydraulic M 46	EUSA	N/A	SPECIALTIES
341162	01162	Humble Hydraulic M 68	EUSA	N/A	SPECIALITES
341163	01163	Humble Hydraulic M 100	EUSA	N/A	SPECIALTIES
376070 376071	01168 01169	Teresstic W 220	FUSA		SPECIALITES
351170	01170	Volumbranded 100 Solvent Neutral XD-3 30 XD-3 30 XD-3 30 DE-MAR MDX DE-MAR 13 DE-MAR 13 DE-MAR 13 DE-MAR 17 XD-3 Extra 40 EXX-Print 990 EXX-Print 776 EXXMAR 24TP 40 RC 250 CB Asphalt 7107 Roofers Flux 140/160 Pen Emulsion Flux AC-20 Asphalt Naphtha with Benzene & Hexane Varsol 18 8ayol 35 Isopar M HAN 857 Spinesstic 10 Spinesstic 22 Humble Hydraulic H 45 Humble Hydraulic H 46 Humble Hydraulic H 68 Humble Hydraulic H 68 Humble Hydraulic M 46 Humble Hydraulic M 46 Humble Hydraulic M 68 Humble Hydraulic M 100 Teresstic W 220 1170 Turbine 011 Concentrate Teresstic 33	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES
341173	01173	Teresstic 33	EUSA	N/A	SPECIALTIES SPECIALTIES
376000	01174	Teresstic 32	EUSA	N/A	SPECIALTIES
376000 376005	01174 01175	Teresstic 32 Teresstic 46	FIICA	N/A N/A	SPECIALTIES SPECIALTIES
376010	01176	Teresstic 68	EUSA	N/A	SPECIALTIES
376020	01177	Teresstic 77	EUSA	N/A	SPECIALTIES SPECIALTIES
376045	01180	Teresstic 100	EUSA	N/A	SPECIALTIES
376065 341183	01182 01183	Teresstic 150 Teresstic 220	FIISA	N/A N/A	SPECIALTIES SPECIALTIES
341184	01184	Teresstic 320	EUSA	N/A	SPECIALTIES
341185	01185	Teresstic 460	EUSA	N/A	SPECIALTIES
338010	01203 01207	Tro-Mar T	EUSA	N/A	SPECIALTIES
338070 338060	01208	Tro-Mar T 100 EP Tro-Mar T EP	FIISA	N/A N/A	SPECIALTIES SPECIALTIES
341209	01209	1209 Turbine Lubricant	EUSA	N/A	SPECIALTIES
376051	01217	Teresso N 150	EUSA	N/A	SPECIALTIES
376050	01217	Teresstic M 150	EUSA	N/A	SPECIALTIES
341222 371225	01222 01225	Aracar 55 Teresstic N 100	FIISA	N/A	SPECIALTIES SPECIALTIES
371228	01226	Teresstic N 460	EUSA	N/A	SPECIALTIES
371227	01228	Teresstic N 320	EUSA EUSA	N/A	SPECIALTIES
371230	01229 01229	Teresso N 220	EUSA	N/A	SPECIALTIES
371230 371229 311234	01229	Teresstic W 220 75 Solvent Neutral	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES
311241	01241	200 Solvent Neutral	EUSA	N/A	SPECIALTIES
311243 311247	01243	150 Solvent Neutral	EUSA	N/A	SPECIALTIES
311247	01247	325 Solvent Neutral	EUSA	N/A	SPECIALTIES
311248	01248 01253	370 Solvent Neutral 450 Solvent Neutral	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES
311253 311254	01254	600 Solvent Neutral	EUSA	N/A	SPECIALTIES
311257	01257	500 Solvent Neutral	EUSA	N/A	SPECIALTIES
311278 311305 311309	01278	150 Solvent Neutral 88 VI	EUSA	N/A	SPECIALTIES
311305	01305	100 Pale Paraffin 240 Pale Paraffin	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES
363005	01309	Nuto H 5	EUSA	N/A	SPECIALTIES
363000	01333	Nuto H 15	EUSA	N/A	SPECIALTIES
363010	01335	Nuta H 32	EUSA	N/A	SPECIALTIES

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	WARNING CODE	PLANT	FURINO
363012	01336	Nuto H 46 Nuto H 68 Nuto H 100 Nuto H 150 1351 Hydraulic Oil 1354 Hydraulic Oil Univis N 15 Univis N 15 Univis N 15 Univis N 32 Univis N 46 Univis N 16 Univis N 16 Univis N 17 Univis N 17 Univis N 18 Univis N 18 Univis N 180	EUSA	N/A	SPECIALTIES	
363015	01337	Nuto H 68	EUSA	N/A	SPECIALTIES	
363020	01339	Nuto H 100	EUSA	N/A	SPECIALTIES	
363025 321351	01343 01351	Nuto H 150	EUSA	N/A N/A	SPECIALTIES	
361354	01354	1354 Hydraulic Oil	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
361354	01354	1354 Hydraulic Oil	EUSA	N/A	SPECIALTIES	
321354	01354	1354 Hydraulic Oil	EUSA	N/A	SPECIALTIES	
321354	01354	1354 Hydraulic Oil	EUSA	N/A	SPECIALTIES	
341355 341355	01354 01355	Univis N 15	EUSA	N/A N/A	SPECIALTIES	
351355	01355	Univis N 22	FIICA	N/A	SPECIALTIES SPECIALTIES	
341356	01356	Univis N 32	EUSA	N/A	SPECIALTIES	
341357	01357	Univis N 46	EUSA	N/A	SPECIALTIES	
341359	01359	Univis N 100	EUSA	N/A	SPECIALTIES	
321361 311365	01361 01365	1361 Detergent Hydraulic Oil	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
311366	01366	100 LP Solvent Neutral 150 LP Solvent Neutral 1367 Base Oil Necton 37	FUSA	N/A	SPECIALTIES	
311367	01367	1367 Base Oil	EUSA	N/A	SPECIALTIES	
360037	01380		E030	N/A	SPECIALTIES SPECIALTIES	
311380 311383	01380 01383	75 Sol Ext Coastal Pale 100 Sol Ext Coastal Pale	EUSA EUSA	N/A N/A	SPECIALTIES	
360040	01383	Necton 40	EUSA	N/A	SPECIALTIES	
360045	01385	Necton 45	EUSA	N/A	SPECIALTIES	
311385	01385	200 Sol Ext. Coastal Pale	EUSA	N/A	SPECIALTIES	
311386 311390	01386	300 Sol Ext. Coastal Pale	EUSA	N/A	SPECIALTIES	
360060	01390 01390	500 Sol Ext. Coastal Pale Necton 60	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
311391	01391	Necton 60 1391 Base 011 Necton 78	EUSA EUSA	inv.	SPECIALTIES	
360078	01394	Necton 78	EUSA EUSA EUSA EUSA	N/A	SPECIALTIES	
311394	01394	900 Sol Ext. Coastal Pale Tro-Mar AS 30	EUSA	N/A	SPECIALTIES	
361399 378065	01399 01400	Tro-Mar AS 30 Tro-Mar 30 150 Solvent Neutral Low Sulfur 150 Solvent Neutral LP Low Sulfur 150 Solvent Neutral High Sulfur	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
311406	01406	150 Solvent Neutral Low Sulfur	EUSA	N/A	SPECIALTIES	
311407	01407	150 Solvent Neutral LP Low Sulfur	EUSA	N/A	SPECIALTIES	
311408	01408	150 Solvent Neutral LP Low Sulfur 150 Solvent Neutral High Sulfur 150 Solvent Neutral LP Hi Sulfur	EUSA	N/A	SPECIALTIES	
311409 311410	01409 01410	500 Solvent Neutral LP Hi Sulfur	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
311411	01411	600 Solvent Neutral High Sulfur	FUSA	N/A	SPECIALTIES	
311412	01412	Bright Stock Low Sulfur	EUSA	N/A	SPECIALTIES	
311413	01413	Bright Stock High Sulfur	EUSA	N/A	SPECIALTIES	
340000 340020	01441	ESSTIC 32	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
340040	01445	150 Solvent Neutral LP Hi Sulfur 600 Solvent Neutral Low Sulfur 600 Solvent Neutral High Sulfur Bright Stock Low Sulfur Bright Stock High Sulfur Esstic 32 Esstic 68 Esstic 150 Coray 22 Coray 32	FUSA	N/A	SPECIALTIES	
341471	01471	Coray 22	EUSA	N/A	SPECIALTIES	
341472	01472			N/A	SPECIALTIES	
341473	01473 01474	Coray 46 Coray 100	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
341475	01475	Coray 150	EUSA	N/A	SPECIALTIES	
341476	01476	Coray 220	EUSA	N/A	SPECIALTIES	
341480	01480	Faxam 15	EUSA	W1	SPECIALTIES	
341481	01481	Faxam 22	EUSA	N/A	SPECIALTIES	
341482 341485	01482 01485	Faxam 46 Chain 01) D	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
341486	01486	Chain 011 22	EUSA		SPECIALTIES	
341487	01487	Chain Oil 100	EUSA	0.02	SPECIALTIES	
311490	01490	Base 011 20	EUSA	DC2	SPECIALTIES	
311491 311501	01491 01501	Base Oil 30 85 Coastal Pale	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
311502	01502	105 Coastal Pale	EUSA	N/A	SPECIALTIES	
311503	01503	150 Coastal Pale	EUSA	N/A	SPECIALTIES	
311505	01505	225 Coastal Pale	EUSA	N/A	SPECIALTIES	
311507 311509	01507	300 Coastal Pale	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
311514	01509 01514	500 Coastal Pale 750 Coastal Pale	EUSA EUSA	N/A	SPECIALTIES	
311518	01518	1200 Coastal Pale	EUSA	N/A	SPECIALTIES	
311534	01534	1534 Displacement Stock	EUSA	DC2	SPECIALTIES	
311535	01535	1535 Displacement Stock	EUSA	N/A	SPECIALTIES SPECIALTIES	
480000 311537	01536 01537	Mixed Lube Interface Used Motor 011	EUSA EUSA		SPECIALTIES	
211617	01617	Superflo High Performance 5W-30	EUSA	N/A	SPECIALTIES	
211618	01618	Superflo High Performance 10W-30	EUSA	N/A	SPECIALTIES	
211619	01619	Superflo High Performance 10W-40	EUSA	N/A	SPECIALTIES	

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO	
211620 211621 211622 211623 211624 211625 211637 231637	01620 01621 01622 01623 01624 01625 01637 01637 01638	Superflo High Performance 20V-50 Superflo High Performance 10W Superflo High Performance 20W-20 Superflo High Performance 30 Superflo High Performance 40 Superflo High Performance 40 Superflo High Performance 50 Superflo SW-30 1637 Motor 011 SW-30 1638 Motor 011 10W-30 Superflo 10W-30 1639 Motor 011 10W-40 Superflo 10W-40 1640 Motor 011 20W-50 Superflo SAE 30 1643 Motor 011 30 Superflo SAE 30 1644 Motor 011 40 Superflo SAE 40 Millcot K220 Arox EP 46 Arox EP 46 Arox EP 320 XD 10W 1718 Motor 011 30 XD 30 1719 Motor 011 30 XD 30 1719 Motor 011 10W XD-3 10W-20 1730 Motor 011 20W-20 1730 Motor 011 30 XD-3 15W-40 XD-3 15W-40 XD-3 15W-40 XD-3 15W-30 1733 Motor 011 10W-30 XD-3 Extra 40 1734 Motor 011 50 XD-3 50 XD 10 W XD 20W-20 XD 30 XD 40 XD 50 1740 Motor 011 30 XD-3 Extra 40 1741 Motor 011 30 1743 Motor 011 30 1743 Motor 011 30 XD-3 Extra 15W-40 Busgard Heavy Duty Eng. 011 30 Busgard Heavy Duty Eng. 011 40	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA	N/A N/A N/A N/A N/A	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES		
231638 211638 231639 211639 231640 211640 231643 211643 231644	01638 01639 01639 01640 01640 01643 01643	1638 Motor 011 10W-30 Superflo 10W-30 1639 Motor 011 10W-40 Superflo 10W-40 1640 Motor 011 20W-50 Superflo 20W-50 1643 Motor 011 30 Superflo SAE 30 1644 Motor 011 40	EUSA EUSA EUSA EUSA EUSA EUSA EUSA		SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES		
211644	01644	Superflo SAE 40	EUSA	. 3.3	SPECIALTIES SPECIALTIES		
356065 313000	01668 01687	Arox FP 46	EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
313020	01688	Arox EP 150	EUSA	N/A	SPECIALTIES SPECIALTIES		
311690	01690	Arox EP 320 x0 10W	EUSA	N/A	SPECIALTIES SPECIALTIES		
231718	01716 01718	1718 Motor 011 30	EUSA		SPECIALTIES		
211718 231719	01718 01719	XD 30 1719 Motor Oil 40	FUSA		SPECIALTIES SPECIALTIES		
231719 211719 211728	01719	XD 40	EUSA		SPECIALTIES		
231728	01728	1728 Motor Oil 10W	FUSA		SPECIALTIES		
211729 231729	01728 01729 01729	XD-3 20V-20	EUSA		SPECIALTIES SPECIALTIES		
231729	01729	1729 Motor 011 20W-20	EUSA		SPECIALTIES SPECIALTIES		
211731	01730 01731	XD-3 40	EUSA		SPECIALTIES		
231731 231732	01731 01732	1731 Motor 011 40	EUSA		SPECIALTIES SPECIALTIES		
211732	01732	XD-3 15W-40	EUSA		SPECIALTIES		
211733 231733	01733	XD-3 10W-30 1733 Motor 011 10W-30	EUSA		SPECIALTIES		
211773	01732 01733 01733 01733	XD-3 Extra 40	EUSA		SPECIALTIES SPECIALTIES		
231734 211734	01734 01734	1734 Motor 011 50 XD-3 50	EUSA FUSA		SPECIALTIES SPECIALTIES		
211735	01735	XD 10 W	EUSA	N/A	SPECIALTIES		
211736 211737	01736 01737	XD 20W-20 XD 30	FUSA	N/A N/A	SPECIALTIES SPECIALTIES		
211738	01738	X0 40	EUSA	N/A	SPECIALTIES		
211739 231740	01739 01740	XD 50 1740 Motor Oil 10W	EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
231741	01741	1741 Motor 011 20V-20	EUSA	N/A	SPECIALTIES		
231742 231743	01742	1742 Motor 011 30	FUSA	N/A N/A	SPECIALTIES SPECIALTIES		
211774	01743 01744	XD-3 Extra 15W-40	EUSA	N/A	SPECIALITES		
211744 231748	01744	Busgard Heavy Duty Eng. 011 30	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
211749	01749			N/A	SPECIALTIES		
231749 211750	01749 01750	1749 Heavy Duty Eng. 011 40 XD-3 10W	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
211751	01751	XD-3 20W-20	EUSA	N/A	SPECIALTIES		
211752 211753	01752 01753	XD-3 30 XD-3 40	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
211754	01754	XD-3 40 XD-3 15V-40	EUSA	N/A	SPECIALTIES		
211775	01755 01755	XD-3 Extra OV-30 XD-3 10V-30	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
231760	01760	1760 Motor 011 10W	EUSA	N/A	SPECIALTIES SPECIALTIES		
231761 231762	01761 01762	1761 Motor 011 20W-20 1762 Motor 011 30	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
231763	01763	1763 Motor 0il 40	EUSA	N/A	SPECIALTIES		
231764 231765	01764	1764 Motor 011 15W-40 1765 Motor 011 10W-30	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
211770	01770	XD-3 Extra 10W	EUSA	N/A	SPECIALTIES		
211771	01771	XD-3 Extra 20W-20 XD-3 Extra 30	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES		
231780	01780	1780 Motor 011 10W	EUSA	N/A	SPECIALTIES		
231781	01781	1781 Motor 0il 20V-20	EUSA	N/A	SPECIALTIES		

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PŁANT LOCATION FURINO
231782	01782	1782 Motor Oil 30 1783 Motor Oil 40 1784 Motor Oil 40 1784 Motor Oil 15W-40 Univolt 60 Univolt N 61 Univolt 80 1836 Insulating Oil Exxon Extra Motor Oil 10W-30 Exxon Extra Motor Oil 20W-40 Superflo Supreme Perform 10W-30 1914 Motor Oil 10W-30 Superflo High Perf. 5W-30 Superflo High Perf. 10W-40 Superflo High Perf. 10W-40 Superflo High Perf. 10W-50 Superflo High Perf. 20W-50 Superflo High Perf. 30 Superflo High Perf. 30 Superflo High Perf. 30 Superflo High Perf. 50 Superflo High Perf. 50 Superflo High Perf. 50 Superflo High Perf. 50 Superflo Supreme Perform 10W-40 1932 Automatic Transmission Fluid 1933 Automatic Transmission Fluid 1934 Automatic Transmission Fluid 1934 Automatic Transmission Fluid 1934 Automatic Transmission Fluid 1941 Chrysler ATF Aquaglide	EUSA	N/A N/A	SPECIALTIES
231783 231784	01783 01784	1784 Motor Oil 15W-40	EUSA	N/A	SPECIALTIES SPECIALTIES
331830	01830	Univolt 60	EUSA	N/A	SPECIALTIES
331831	01831 01836	Univoit N 61	EUSA Fusa	N/A N/A	SPECIALTIES SPECIALTIES
331836 381386	01836	1836 Insulating Oil	EUSA	N/A	SPECIALTIES
212214	01908	Exxon Extra Motor 011 10W-30	EUSA	N/A	SPECIALTIES
211909 211911	01909 01911	Exxon Extra Motor 011 10W-40 Exxon Extra Motor 011 20W-40	EUSA Fusa	N/A N/A	SPECIALTIES SPECIALTIES
211913	01913	Superflo Supreme Perform 10W-30	EUSA	N/A	SPECIALTIES
212400	01914	1914 Motor 0il 10W-30	EUSA	N/A	SPECIALTIES
211917 211918	01917 01918	Superflo High Perf 10W-30	EUSA FUSA	N/A N/A	SPECIALTIES SPECIALTIES
211919	01919	Superflo High Perf. 10W-40	EUSA	N/A	SPECIALTIES
211920	01920	Superflo High Perf. 20W-50	EUSA	N/A N/A	SPECIALTIES
211921 211922	01921 01922	Superflo High Perf. 20W-20	EUSA	N/A	SPECIALTIES SPECIALTIES
211923	01923	Superflo High Perf. 30	EUSA	N/A	SPECIALTIES
211924 211925	01924 01925	Superflo High Perf. 40	EUSA Fusa	N/A N/A	SPECIALTIES SPECIALTIES
211926	01926	Superflo Supreme Perform 10W-40	EUSA	N/A	SPECIALTIES
211932	01932	1932 Automatic Transmission Fluid	EUSA	N/A	SPECIALTIES
213933 211934	01933 01934	1934 Automatic Transmission Fluid	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
211938	01938	1938 Automatic Transmission Fluid	EUSA	N/A	SPECIALTIES
211941 231946	01941 01946	1941 Chrysier ATF	EUSA FIISA	N/A DC1	SPECIALTIES SPECIALTIES
231947	01947	1947 2-Cycle Oil	EUSA	DC1	SPECIALTIES
211947	01947	Superflo 2-Cycle Oil	EUSA	DC1	SPECIALTIES
212002 213025	01952 01956	Exxon ATF	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
211957	01957	Superflo ATF	EUSA	N/A	SPECIALTIES
211958 211970	01958 01970	Superflo ATF-M	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
211973	01973	1973 Automatic Transmission Fluid	EUSA	N/A	SPECIALTIES
211975	01975	1938 Automatic Transmission Fluid 1941 Chrysler ATF Aquaglide 1947 2-Cycle Oil Superflo 2-Cycle Oil 1952 Motor Oil 10W-40 Exxon ATF Superflo ATF-M Busgard TF 1973 Automatic Transmission Fluid 1975 Automatic Transmission Fluid 1975 Automatic Transmission Fluid 1975 Automatic Transmission Fluid Torque Fluid 56 Torque Fluid 47 Exxon Plus Motor Oil 10W Exxon Plus Motor Oil 10W Exxon Plus Motor Oil 20W-20 Exxon Plus Motor Oil 30 Exxon Plus Motor Oil 30 Exxon Plus Motor Oil 30 Exxon Plus Motor Oil 40 Exxon Plus Motor Oil 40 Exxon Heavy Duty 10W Exxon Heavy Duty 10W Exxon Heavy Duty 40 Exxon Heavy Duty 40 Exxon Heavy Duty 40 Exxon Heavy Duty 20W-20 XD-3 Extra 30 XD-3 Extra 40 2050 Motor Oil 20W-40	EUSA	N/A	SPECIALTIES
213983 213860	01983 01994	Torque Fluid 55	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES
211021	02010	Exxon Plus Motor Oil 10W	EUSA	N/A	SPECIALTIES
212010 212011	02010 02011	Exxon Plus Motor Oil 10W Exxon Plus Motor Oil 20W-20	EUSA Fusa	N/A N/A	SPECIALTIES SPECIALTIES
212012	02012	Exxon Plus Motor Oil 30	EUSA	N/A	SPECIALTIES
212013	02013	Exxon Plus Motor 011 40	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
212014 215730	02014 02026	2026 MIL-B SF Motor Oil 30	EUSA	N/A	SPECIALTIES
215740	02027	2027 MIL-B SF Motor Oil 40	EUSA	N/A	SPECIALTIES
212038 212039	02038 02039	Exxon Heavy Duty 10W	EUSA Filsa	N/A N/A	SPECIALTIES SPECIALTIES
212040	02033	Exxon Heavy Duty 40	EUSA	N/A	SPECIALTIES
212041	02041	Exxon Heavy Duty 15W-40	EUSA	N/A N/A	SPECIALTIES
212043 212048	02043 02048	XD-3 Extra 30	EUSA	N/A	SPECIALTIES SPECIALTIES
212049	02049	XD-3 Extra 40	EUSA	N/A	SPECIALTIES
212350	02050	2000	EUSA Eusa	N/A N/A	SPECIALTIES SPECIALTIES
212051 212052	02051 02052	XD-3 10W XD-3 20W-20	EUSA	N/A	SPECIALTIES
212053	02053	XD-3 30	EUSA	N/A	SPECIALTIES
212054 212055	02054 02055	XD-3 40 XD-3 15W-40	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES
212065	02065	XO-3 Extra 15W-40	EUSA	N/A	SPECIALTIES
212067	02067	2067 Motor 0il 15W-40	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
232068 232 0 69	02068 02069	HDX Plus 10W HDX Plus 20W-20	EUSA EUSA	N/A	SPECIALTIES
232 0 70	02070	HDX Plus 30	EUSA ·	N/A	SPECIALTIES
232 07 1 316055	02071 02173	HDX Plus 40 Estor G	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES
312181	02181	Estor Super 40	EUSA	N/A	SPECIALTIES
312182	02182	Estor Super 15W-40	EUSA	N/A N/A	SPECIALTIES SPECIALTIES
316086 212201	02183 02201	Estor GLX 2201 Diesel Lubricating Oil	EUSA EUSA	N/A	SPECIALTIES
312201	02201	DIOL 2201	EUSA	N/A	SPECIALTIES
212202	02202	2202 Diesel Lubricating Oil	EUSA	N/A	SPECIALTIES

PRODUCT	FORMULA	PRODUCT DESCRIPTION DIOL 2203 2211 Diesel Lubricating Oil DIOL 2211 DIOL 2212 2213 Diesel Lubricating Oil 20W-4 DIOL 2213 ZOW40 DIOL 2215 DE-MAR MOX DE-MAR MOX DE-MAR SD 30 2219 Diesel Lubricating Oil DIOL 2219 TRO-MAR SD 40 2220 Marine Diesel Lubricating Oil DIOL 2220 Marine Diesel Dil DIOL 2220 Marine Diesel Dil DIOL 2220 Marine Diesel Dil DIOL 2221 DE-MAR 17 TRO-MAR 5 TRO-MAR SV TRO-MAR SR 2255 MIL-C Motor Oil 10W 2257 MIL-C Motor Oil 30 2265 Motor Oil 15W-40 2763 Motor Oil 30 2265 Motor Oil 30 2265 Motor Oil 15W-40 TRO-MAR SR 30 TRO-MAR SR 40 TRO-MAR SR 50 TRO-MAR SR 40 TRO-MAR SR 50 TRO-MAR SR 40 TRO-MAR SR 50 TRO-MAR 50 T	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
312203	02203	DIOL 2203	EUSA	N/A CSI	SPECIALTIES	
212211	02211	2211 Diesel Lubricating Oil	EUSA	CSI	SPECIALTIES	
312211	02211 02211 02212	DIOL 2211	EUSA	CS1	SPECIALTIES SPECIALTIES SPECIALTIES	
312212	02212	2213 Diesel Lubrication Gil 20U-A	FUSA	CS1 CS1	SPECIALITES	
312213	02213 02213 02215 02216 02217 02218 02219 02219 02219 02220	DIOL 2213 20V40	EUSA	CSI	SPECIALTIES SPECIALTIES SPECIALTIES	
312215	02215	DIOL 2215	EUSA	N/A	SPECIALTIES	
362216	02216	DE-MAR MOX	EUSA	N/A	SPECIALILES	
362217	02217	DE-MAR XT	EUSA	N/A	SPECIALTIES	
316336	02218	TRO-MAR SD 30	EUSA	N/A	SPECIALTIES	
212219 312219	02219	DIOL 2219	FUSA	CS1 CS1	SPECIALTIES SPECIALTIES	
316337	02219	TRO-MAR SD 40	EUSA	CS1	SPECIALTIES	
212220 312220	02220	2220 Marine Diesel Lubricating Oil	EUSA	CS1	SPECIALTIES	
312220	02220	DIOL 2220	EUSA	CS1	SPECIALTIES	
212221	02221	Marine Diesel Oil	EUSA		SPECIALTIES	
312205 362225	02221 02221 02225	DE_MAD 17	EUSA	CS1	SPECIALTIES SPECIALTIES	
316335	02231	TRO-MAR 5	FUSA	N/A	SPECIAL TIES	
328023	02231 02233 02234 02236	TRO-MAR SV	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
212234	02234	TRO-MAR SVX	EUSA	N/A	SPECIALTIES	
212236	02236	TROMAR SVX-A	EUSA	N/A	SPECIALTIES	
215255 215257	02255 02257 02259	2255 MIL-C Motor 011 10W	EUSA	N/A	SPECIALTIES	
212259	02259	2259 Motor Oil 15W-40	FIISA	N/A N/A	SPECIALITIES	
212263	02263	2263 Motor 011 30	FUSA	N/A	SPECIALTIES	
212265	02263 02265	2265 Motor 011 15W-40	EUSA	N/A N/A	SPECIALTIES	
312221	02267	TRO-MAR SR 30	EUSA	N/A	SPECIALTIES	
312225	02267 02268 02273 02274	TRO-MAR SR 40	EUSA	N/A N/A N/A	SPECIALTIES	
212273 212274	02274	TRU-MAR SRE 3U	EUSA	N/A	SPECIALITES	
232316	02316	Esso Aviation 011 120	FUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
217050	02316	Aviation 011 120	EUSA	N/A	SPECIALTIES	
212316	02316	2316 Aviation Oil	EUSA	N/A	SPECIALITES	
217040	02317 02327	Aviation Oil 100	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
212327	02327	Aviation Oil EE 65	EUSA	N/A	SPECIALITES	
212238 212239	02320	Aviation Oil FF 100	FIISA	N/A N/A	SPECIALTIES	
212330	02329 02330	Aviation Oil EE 120	EUSA	N/A	SPECIALTIES SPECIALTIES	
217556	02380	Turbo 011 2380	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
217582	02382	Turbo 011 25	EUSA	N/A N/A N/A	SPECIALTIES	
212384	02384	Turbo 011 35	EUSA	N/A	SPECIALTIES	
217574 217589	02385 02389	Turbo Oil 2380	FUSA	W/A	SPECIALTIES	
212435	02435	XD 10W	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
212436	02435 02436	XD 20W-20	EUSA	N/A	SPECIALTIES	
212437	02437	XD 30	EUSA	N/A N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
212438	02438	XD 40	EUSA	N/A	SPECIALTIES	
212439 232440	02439 02440	XD 50	EUSA EUSA	N/A N/A	SPECIALITES	
232441	02441	2440 Motor 011 10W 2441 Motor 011 20W-20	EUSA	N/A	SPECIALTIES SPECIALTIES	
232442	02442	2442 Motor 011 30	EUSA	N/A	SPECIALTIES	
232443	02443	2442 Motor 011 40	EUSA	N/A	SPECIALTIES	
212448	02448	Busgard Heavy Duty Eng. 011 40	EUSA	N/A	SPECIALTIES	
212449	02449	Busgard Heavy Duty Eng. 011 30	EUSA	N/A	SPECIALTIES	
212450 212451	02450 02451	XD-3 10W XD-3 20W-20	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
212452	02452	XD-3 30	EUSA	N/A	SPECIALTIES	
212453	02453	XD-3 40	EUSA	N/A	SPECIALTIES	
212454	02454	XD-3 15V-40	EUSA	N/A	SPECIALTIES	
212455	02455	XD-3 10W-30	EUSA	N/A	SPECIALTIES	
232460 232461	02460	2450 Motor 011 10W	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
232462	02461 02462	2461 Motor 011 20W-20 2462 Motor 011 30	EUSA	N/A	SPECIALTIES	
232463	02463	2463 Motor 011 40	EUSA	N/A	SPECIALTIES	
232464	02464	2464 Motor 011 15W-40	EUSA	N/A	SPECIALTIES	
232465	02465	2465 Motor 011 10W-30	EUSA	N/A	SPECIALTIES	
212470	02470	XD-3 Extra 10W	EUSA	M/A N/A	SPECIALTIES SPECIALTIES	
212471 212472	02471 02472	XD-3 Extra 20W-20 XD-3 Extra 30	EUSA EUSA	N/A	SPECIALTIES	
212473	02473	XD-3 Extra 40	EUSA	N/A	SPECIALTIES	
212474	02474	XD-3 Extra 15W-40	EUSA	N/A	SPECIALTIES	
232481	02481	2481 Motor 011 20W-20	EUSA	N/A	SPECIALTIES	

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
232482	02482	2482 Motor 011 30	EUSA	N/A	SPECIALTIES	
232483	02483	2483 Motor Oil 40 2484 Motor Oil 15W-40	EUSA	N/A	SPECIALTIES	
232484 312507	02484 02507	150 Sol Ext. Bright Stock	EUSA	N/A N/A	SPECIALTIES	
319035	02561	2600 VIS PA CYL 81end Stk	FIISA	C3	SPECIALTIES SPECIALTIES	
319035 225026 328021	02561 02561 02576	Penn Resin	EUSA EUSA EUSA EUSA EUSA EUSA	C3	SPECIALTIES	
328021	02576	Cylesstic 1500	EUSA	N/A	SPECTAL TIES	
322610 322611	02610	Cylesstic TK 460 Cylesstic TK 680 Cylesstic TK 1000 Canthus 680 Canthus 1000	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
322611	02611	Cylesstic TK 680	EUSA	N/A	SPECIALTIES	
322613 219030	02613	Cylesstic TK 1000 Canthus 680	EUSA	N/A N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
319040	02627	Canthus 1000	FUSA	N/A	SPECIALTIES	
386040	02626 02627 02970 02971	Zerice 46	EUSA EUSA EUSA EUSA	N/A		
386050	02971	Zerice 68	EUSA	N/A	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	
386061	029/2	2972 Compressor 011	EUSA	N/A	SPECIALTIES	
333050 333054	03050 03054	Telura 315 Fog Oil	EUSA EUSA	N/A	SPECIALTIES	
333056	03056	EXX-Print 703	EUSA	N/A N/A	SPECIALTIES	
333057	03057	EXX-Print 705	EUSA	N/A	3LCCTVC11E2	
343058	03058	EXX-Print 775	EUSA	N/A	SPECIALTIES SPECIALTIES	
333060	03060	EXX-Print 990	EUSA	C3	SPECIALTIES	
333061 333063	03061	EXX-Print 710 EXX-Print 791	EUSA EUSA	N/A	SPECIALTIES	
333067	03067	DX-Print 7220	EUSA	N/A N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
333068	03068	Telura 415	EUSA	N/A	SPECIALTIES	
333077	03077	Telura 330	EUSA	N/A	SPECIALTIES	
333078	03078	Telura 343	EUSA	N/A	SPECIALTIES	
343079	03079	3079 Process 011	EUSA	N/A	SPECIALTIES	
333079 333081	03079	Telura 407 Telura 401	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
333082	03083	Telura 323	EUSA	N/A	SPECIALTIES	
333083	03083	Telura 417	EUSA	N/A	SPECIALTIES	
333084	03084	Telura 521	EUSA	N/A	SPECIALTIES SPECIALTIES	
333088	03088	Telura 662	EUSA	N/A	SPECIALTIES	
333090 333091	03090	Telura 613	EUSA	N/A N/A	SPECIALTIES SPECIALTIES SPECIALTIES	
343092	03092	Telura 619 Telura 671	EUSA	N/A	SPECIALITES	
343094	03094	3094 Process 0il	EUSA	N/A	SPECIALTIES	
333098	03098	Telura 6190	EUSA	N/A	SPECIALTIES	
343099	03099	3099 Process 011	EUSA	N/A	SPECIALTIES	
343101 343102	03101	Synesstic 32 Synesstic 68	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
343103	03103	Synesstic 100	EUSA	N/A	SPECIALTIES	
343106	03106	Instrument 011	EUSA	N/A	SPECIALTIES	
343127	03127	Univis J 13	EUSA	N/A	SPECIALTIES	
343128	03128	Univis J 13 A Univis J 13 A	EUSA	N/A	SPECIALTIES SPECIALTIES	
343129 379058	03129 03131	Univis J 26	EUSA EUSA	N/A N/A	SPECIALTIES	
313146	03146	3146 Hydraulic Oil Base	EUSA	N/A	SPECIALTIES	
313147	03147	3147 Hydraulic Oil Base	EUSA	N/A	SPECIALTIES	
363186	03186	Somentor 31	EUSA	DC1	SPECIALTIES SPECIALTIES SPECIALTIES	
363187	03187	Somentor 35	EUSA	N/A	SPECIALITES	
363188 363189	03188	Somentor 42 Somentor 43	EUSA EUSA	N/A W1	SPECIALTIES SPECIALTIES	
133193	03193	Somentor 35	EUSA		SPECIALTIES	
133194	03194	Somentor 31	EUSA		SPECIALTIES SPECIALTIES	
355000	03200	Hentor 28	EUSA	W1	SPECIALTIES	
355020	03201	Hentor 32	EUSA	VI	SPECIALTIES	
383261 333296	03251 03295	3261 White Oil Base 75 P Caloria HT 43	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
346036	03320	Flexon 660	EUSA	N/A	SPECIALTIES	
346055	03335	Flexon 845	EUSA	H/A	SPECIALTIES	
346086	03336	Flexon 785	EUSA	N/A	SPECIALTIES	
343337	03337	Flexon 767	EUSA	444	SPECIALTIES	
333339 346039	03339	Flexon 650	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
383359	03341	Flexon 680 Zerice S 68	EUSA EUSA	N/A	SPECIALTIES	
383360	03350	Zerice S100	EUSA	N/A	SPECIALTIES	
383360 333376	03375	Jayflex 210	EUSA	N/A	SPECIALTIES	
333389	03389	Flexon 815	EUSA	H/A	SPECIALTIES SPECIALTIES	
327796 343445	03442	Orchex 796	EUSA EUSA	N/A	SPECIALTIES	
493501	03445 03501	Parvan 2730	EUSA	N/A	SPECIALTIES	
	03301	Latitude Print	-03/1	0.0		

495020 30502 Arram 3150 EISA W.A SPECIALTIES	PRODU	CT FORMULA	PRODUCT DESCRIPTION		SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURING
495503 03503 3503 Ref Ined War	4935	02 03502	Parwan 3150	FIICA		W/A	SPECIALTIES	
### ### ### ### ### ### ### ### ### ##	4965	03 03503	3503 Refined Wax	EUSA		N/A	SPECIALTIES	
1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989-25 1989	4935	03 03503		EUSA		N/A	SPECIAL TIES	
183523	4935	04 03504	Parvan 5250	EUSA		N/A	SPECIALTIES	
183523	4965	07 03507	3507 Refined Wax	FUSA			SPECIALTIES	
183523	4935	07 03507	Parvan 129	EUSA		N/A	SPECIALTIES	
### ### ### ### ### ### ### ### ### ##	4935	19 03519	Parvan 4550	EUSA		N/A	SPECIALTIES	
### ### ### ### ### ### ### ### ### ##	4965	25 03525	3525 Scale Vax	EUSA		N/A	SPECIALTIES	
### ### ### ### ### ### ### ### ### ##	4966	48 03648		FUSA		N/A	SPECIALTIES	
### ### ### ### ### ### ### ### ### ##	4936	48 03548	Slack Wax 150	EUSA		N/A	SPECIALTIES	
333710	4936	50 03650		EUSA		N/A	SPECIALTIES	
333710	4966	80 03680		FUSA		N/A	SPECIALTIES	
330337 00377 Krewell 40 EUSA MA SPECIALTIES 350050 03779 Krewell 50 EUSA MA SPECIALTIES 350050 03779 Krewell 50 EUSA MA SPECIALTIES 343802 03802 Nutwell 30 EUSA MA SPECIALTIES 343802 03802 Nutwell 82 EUSA MA SPECIALTIES 343827 03827 Dortan M 14 EUSA MA SPECIALTIES 343837 03827 Dortan M 34 EUSA MA SPECIALTIES 343838 03833 Dortan M 35 EUSA MA SPECIALTIES 343838 03833 Dortan M 35 EUSA MA SPECIALTIES 343839 03830 Pennex M 40 EUSA MA SPECIALTIES 343831 03834 Dortan M 35 EUSA MA SPECIALTIES 343831 03834 Dortan M 35 EUSA MA SPECIALTIES 343832 03833 Dortan M 35 EUSA MA SPECIALTIES 343831 03834 Dortan M 36 EUSA MA SPECIALTIES 343831 03834 Dortan M 36 EUSA MA SPECIALTIES 343831 03834 Dortan M 35 EUSA MA SPECIALTIES 343831 03834 Dortan M 35 EUSA MA SPECIALTIES 343831 03834 Lettor 45 EUSA MA SPECIALTIES 343831 03834 Dortan M 37 EUSA MA SPECIALTIES 343831 03834 Dortan M 37 EUSA MA SPECIALTIES 343831 03834 Lettor 45 EUSA MA SPECIALTIES 343831 03834 Lettor 45 EUSA MA SPECIALTIES 344184 NA S	49368	80 03580	Parvan 4450	EUSA		N/A	SPECIALTIES	
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414245 04245 Ronek EP 0 EUSA M/A SPECIALTIES 414247 04247 Ronek EP 1 EUSA M/A SPECIALTIES 414247 04247 Ronek EP 2 EUSA M/A SPECIALTIES 4161011 04291 Van Estan 10 EUSA M/A SPECIALTIES 414485 04456 4456 Graphite Grease 1 EUSA M/A SPECIALTIES 414481 04481 Ladex Subzero Special EUSA C2 SPECIALTIES 414481 04481 Ladex Subzero Special EUSA C2 SPECIALTIES 414508 04508 Van Talgar EP 3 EUSA C2 SPECIALTIES 414508 04508 4508 EP Grease EUSA C2 SPECIALTIES 41809 04509 04509 90 EP Grease EUSA C2 SPECIALTIES 468030 04510 Van Talgar EP 5 EUSA C2 SPECIALTIES 468050 04510 Van Talgar EP 5 EUSA C2 SPECIALTIES 468050 04569 Mebula EP 0 EUSA C2 SPECIALTIES 468050 04569 Nebula EP 0 EUSA M/A SPECIALTIES 436031 04570 Nebula EP 1 EUSA M/A SPECIALTIES 436032 04571 Nebula EP 2 EUSA M/A SPECIALTIES 416385 04585 Carum 330 EUSA M/A SPECIALTIES 414729 04729 Exxxxx TNS 419100 04786 Andok 260 EUSA M/A SPECIALTIES 419100 04786 Andok B EUSA M/A SPECIALTIES 419100 04788 ANDOR C	42103	0 04230		EUSA		N/A	SPECIALTIES	
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414245 04268 Ronek EP 1 414247 04247 Ronek EP 2 4151011 04291 Van Estan 10 414485 04456 Graphite Grease 1 414481 04481 Ladex Subzero Special EUSA 488030 04508 Van Taigar EP 3 414509 04509 Van Taigar EP 4 418509 04509 Van Taigar EP 4 4186050 04510 Van Taigar EP 5 4186050 04510 Van Taigar EP 5 4186050 04510 Van Taigar EP 5 4186050 04550 Mebula EP 0 4186050 04550 Mebula EP 0 4186050 04550 Mebula EP 1 4186050 04550 Mebula EP 2 4186050 04551 Mebula EP 2 4186050 04551 Fibrax 370 41870 Mebula EP 2 41870 04501 Fibrax 370 41870 04501 Fibrax 370 41870 04729 Exxon TMS 419130 04785 Andok 260 419110 04786 Andok B 419110 04788 Andok BR 419120 04788 Andok BR 419120 04788 Andok BR 419170 05127 Beacon 25 419170 05133 Beacon 2 419170 05133 Beacon 2 419170 05133 Beacon 5 419170 05127 Beacon 7 419170 05133 Beacon 5 419170 0512		5 04245	Ronek EP 0	EUSA		N/A	SPECIALTIES	
## 414481	41424	5 04246	Ronek EP 1	EUSA		N/A	SPECIALTIES	
## 414481		7 04247		EUSA			SPECIALTIES	
414481 04481 Ladex Subzero Special EUSA CC2 SPECIALTIES 468030 04508 Van Talgar EP 3 EUSA C2 SPECIALTIES 414508 04508 4508 EP Grease EUSA C2 SPECIALTIES 468040 04509 Van Talgar EP 4 EUSA C2 SPECIALTIES 4168050 04509 Van Talgar EP 5 EUSA C2 SPECIALTIES 468050 04510 Van Talgar EP 5 EUSA C2 SPECIALTIES 436050 04510 Van Talgar EP 5 EUSA C2 SPECIALTIES 436031 04570 Mebula EP 0 EUSA N/A SPECIALTIES 436032 04571 Mebula EP 2 EUSA N/A SPECIALTIES 414585 04585 Carum 330 EUSA N/A SPECIALTIES 414729 04729 Exxon TMS EUSA N/A SPECIALTIES 419130 04785 Andok 260 EUSA N/A SPECIALTIES 419110 04786 Andok B EUSA N/A SPECIALTIES 419120 04787 Andok C EUSA N/A SPECIALTIES 419110 04786 Andok BR EUSA N/A SPECIALTIES 419110 04786 Andok BR EUSA N/A SPECIALTIES 419110 04786 Bacon 325 EUSA N/A SPECIALTIES 419120 05120 S102 White Grease EUSA N/A SPECIALTIES 419120 05120 Beacon 325 EUSA N/A SPECIALTIES 419760 05120 Beacon 325 EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA N/A SPECIALTIES 419703 05133 Beacon 2 EUSA N/A SPECIALTIES 419504 DS1125 Beacon 72 EUSA N/A SPECIALTIES 419703 05133 Beacon 2 EUSA N/A SPECIALTIES 419504 DS123 Beacon 2 EUSA N/A SPECIALTIES 419703 OS133 Beacon 2 EUSA N/A SPECIALTIES 419504 DS133 Beacon 2 EUSA N/A SPECIALTIES 419505 DS133 Beacon 2 EUSA N/A SPECIALTIES		6 04456		FUSA			SPECIALTIES	
414508 04508 4508 EP Grease 468040 04509 Van Talgar EP 4 418509 04509 4509 4509 EP Grease 418509 04509 4509 EP Grease 418509 04509 4509 EP Grease 418508 04500 04510 Van Talgar EP 5 436050 04510 Van Talgar EP 5 436050 04569 Mebula EP 0 EUSA 436031 04570 Mebula EP 1 EUSA 436032 04571 Mebula EP 2 EUSA 414585 04585 Carum 330 EUSA 414585 04585 Carum 330 EUSA 414729 04729 Exxon TMS 419130 04785 Andok 260 EUSA 419130 04786 Andok B EUSA 419100 04786 Andok B EUSA 419110 04788 Andok BR 419100 04788 Andok BR 419700 05102 5102 White Grease EUSA 419760 05115 Beacon 325 EUSA M/A SPECIALTIES 419760 05116 Cotton Picker Spindle Grease EUSA M/A SPECIALTIES 419700 05127 Beacon P 290 EUSA M/A SPECIALTIES 419702 05121 Beacon 2 EUSA M/A SPECIALTIES 419703 05131 Beacon 2 EUSA M/A SPECIALTIES 419703 05133 Beacon EP-1 EUSA M/A SPECIALTIES 5 EUSA M/A SPECIALTIES 5 EUSA M/A SPECIALTIES 5 EUSA M/A SPECIALTIES 6 EUSA M/A SPECIALTIES	41448	1 04481	Ladex Subzero Special	EUSA		002	SPECIALTIES	
436050 04569 Mebula EP 0 EUSA N/A SPECIALTIES 436031 04570 Mebula EP 1 EUSA N/A SPECIALTIES 436032 04571 Mebula EP 2 EUSA N/A SPECIALTIES 414585 04585 Carum 330 EUSA N/A SPECIALTIES 421537 04715 Fibrax 370 EUSA N/A SPECIALTIES 414729 04729 Exxon TMS EUSA SPECIALTIES 419130 04785 Andok 260 EUSA N/A SPECIALTIES 419100 04786 Andok B EUSA N/A SPECIALTIES 419100 04786 Andok B EUSA N/A SPECIALTIES 419110 04788 Andok BR EUSA N/A SPECIALTIES 415102 05102 S102 White Grease EUSA N/A SPECIALTIES 415106 05106 Cotton Picker Spindle Grease EUSA N/A SPECIALTIES 419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA N/A SPECIALTIES 419703 05132 Beacon 3 EUSA N/A SPECIALTIES 419703 05133 Beacon 3 EUSA N/A SPECIALTIES 419703 05133 Beacon 3 EUSA N/A SPECIALTIES		0 04508	Van Talgar EP 3	EUSA		CZ	SPECIALTIES	
436050 04569 Mebula EP 0 EUSA N/A SPECIALTIES 436031 04570 Mebula EP 1 EUSA N/A SPECIALTIES 436032 04571 Mebula EP 2 EUSA N/A SPECIALTIES 414585 04585 Carum 330 EUSA N/A SPECIALTIES 421537 04715 Fibrax 370 EUSA N/A SPECIALTIES 414729 04729 Exxon TMS EUSA SPECIALTIES 419130 04785 Andok 260 EUSA N/A SPECIALTIES 419100 04786 Andok B EUSA N/A SPECIALTIES 419100 04786 Andok B EUSA N/A SPECIALTIES 419110 04788 Andok BR EUSA N/A SPECIALTIES 415102 05102 S102 White Grease EUSA N/A SPECIALTIES 415106 05106 Cotton Picker Spindle Grease EUSA N/A SPECIALTIES 419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA N/A SPECIALTIES 419703 05132 Beacon 3 EUSA N/A SPECIALTIES 419703 05133 Beacon 3 EUSA N/A SPECIALTIES 419703 05133 Beacon 3 EUSA N/A SPECIALTIES			Van Talgar FP 4	FUSA		C2	SPECIALTIES	
436050 04569 Mebula EP 0 EUSA N/A SPECIALTIES 436031 04570 Mebula EP 1 EUSA N/A SPECIALTIES 436032 04571 Mebula EP 2 EUSA N/A SPECIALTIES 414585 04585 Carum 330 EUSA N/A SPECIALTIES 421537 04715 Fibrax 370 EUSA N/A SPECIALTIES 414729 04729 Exxon TMS EUSA SPECIALTIES 419130 04785 Andok 260 EUSA N/A SPECIALTIES 419100 04786 Andok B EUSA N/A SPECIALTIES 419100 04786 Andok B EUSA N/A SPECIALTIES 419110 04788 Andok BR EUSA N/A SPECIALTIES 415102 05102 S102 White Grease EUSA N/A SPECIALTIES 415106 05106 Cotton Picker Spindle Grease EUSA N/A SPECIALTIES 419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA N/A SPECIALTIES 419703 05132 Beacon 3 EUSA N/A SPECIALTIES 419703 05133 Beacon 3 EUSA N/A SPECIALTIES 419703 05133 Beacon 3 EUSA N/A SPECIALTIES			4509 EP Grease	EUSA		C2	SPECIALTIES	
436031 04570 Nebula EP 1 EUSA N/A SPECIALTIES 436032 04571 Nebula EP 2 EUSA N/A SPECIALTIES 414585 04585 Carum 330 EUSA N/A SPECIALTIES 412537 04715 Fibrax 370 EUSA N/A SPECIALTIES 414729 04729 Exxon TMS EUSA SPECIALTIES 419130 04785 Andok 260 EUSA N/A SPECIALTIES 419140 04786 Andok B EUSA N/A SPECIALTIES 419120 04787 Andok C EUSA N/A SPECIALTIES 419110 04788 Andok BR EUSA N/A SPECIALTIES 415102 05102 5102 White Grease EUSA N/A SPECIALTIES 415106 05106 Cottom Picker Spindle Grease EUSA N/A SPECIALTIES 419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA N/A SPECIALTIES 415129 05129 Exxon TML EUSA N/A SPECIALTIES 419703 05132 Beacon 2 EUSA N/A SPECIALTIES 419703 05133 Beacon 3 EUSA N/A SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES			Van Talgar EP 5	EUSA		C2	SPECIALTIES	
436032 04571 Nebula EP 2 EUSA N/A SPECIALTIES 414585 04585 Carum 330 EUSA N/A SPECIALTIES 421537 04715 Fibrax 370 EUSA N/A SPECIALTIES 419130 04729 Exxon TMS EUSA SPECIALTIES 419130 04785 Andok 260 EUSA N/A SPECIALTIES 419100 04786 Andok B EUSA N/A SPECIALTIES 419120 04787 Andok C EUSA N/A SPECIALTIES 419120 04788 Andok BR EUSA N/A SPECIALTIES 415102 05102 5102 White Grease EUSA N/A SPECIALTIES 415106 05106 Cotton Picker Spindle Grease EUSA N/A SPECIALTIES 419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415120 05120 Arapen RB 320 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA N/A SPECIALTIES 419720 05127 Beacon P 290 EUSA N/A SPECIALTIES 419703 05132 Beacon 3 EUSA N/A SPECIALTIES 419703 05133 Beacon 2 EUSA N/A SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES								
A14585 O4585 Carum 330 EUSA N/A SPECIALTIES								
141729	41458	5 04585	Carum 330	EUSA		N/A	SPECIALTIES	
19130	42153	7 04715	Fibrax 370	EUSA		N/A	SPECIALTIES	
419100 04786 Andok B EUSA N/A SPECIALTIES 419120 04787 Andok C EUSA N/A SPECIALTIES 419110 04788 Andok BR EUSA N/A SPECIALTIES 419110 04788 Andok BR EUSA N/A SPECIALTIES 415102 05102 5102 White Grease EUSA N/A SPECIALTIES 415106 05106 Cotton Picker Spindle Grease EUSA N/A SPECIALTIES 419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415120 05120 Arapen RB 320 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA N/A SPECIALTIES 419720 05127 Beacon P 290 EUSA N/A SPECIALTIES 419720 05127 Beacon P 290 EUSA N/A SPECIALTIES 419702 05131 Beacon P 290 EUSA N/A SPECIALTIES 419703 05132 Beacon 3 EUSA C2 SPECIALTIES 419703 05133 Beacon 3 EUSA C2 SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES	41913	0 04729		FUSA		N/A	SPECIALTIES	
419120	41910	0 04786		EUSA		N/A	SPECIALTIES	
415102 05102 5102 White Grease EUSA N/A SPECIALTIES 415106 05106 Cottom Picker Spindle Grease EUSA N/A SPECIALTIES 419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415120 05120 Arapen RB 320 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA SPECIALTIES 419720 05127 Beacon P 290 EUSA N/A SPECIALTIES 419720 05129 Exxon TML EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA N/A SPECIALTIES 419703 05132 Beacon 3 EUSA C2 SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES	41912	0 04787	Andok C	EUSA			SPECIALTIES	
#15106	41911	0 04788	Andok BR	EUSA		W/A	SPECIALTIES	
419760 05115 Beacon 325 EUSA N/A SPECIALTIES 415120 05120 Arapen RB 320 EUSA N/A SPECIALTIES 415124 05124 Gear Cover 40 EUSA SPECIALTIES 419720 05127 Beacon P 290 EUSA N/A SPECIALTIES 419720 05129 Exxon TML EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA N/A SPECIALTIES 419703 05132 Beacon 2 EUSA C2 SPECIALTIES 419703 05133 Beacon 3 EUSA C2 SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES	41510	6 05106	Cotton Picker Spindle Grease	EUSA		N/A	SPECIALTIES	
415124 05124 Gear Cover 40 EUSA SPECIALTIES 419720 05127 Beacon P 290 EUSA N/A SPECIALTIES 415129 05129 Exxon TML EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA C2 SPECIALTIES 419703 05132 Beacon 3 EUSA C2 SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES	41976	0 05115	Beacon 325	EUSA		N/A	SPECIALTIES	
419720 05127 Beacon P 290 EUSA N/A SPECIALTIES 415129 05129 Exxon TML EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA C2 SPECIALTIES 419703 05132 Beacon 3 EUSA C2 SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES	41512			EUSA		N/A	SPECIALTIES	
415129 05129 Exxon TML EUSA N/A SPECIALTIES 419702 05131 Beacon 2 EUSA C2 SPECIALTIES 419703 05132 Beacon 3 EUSA C2 SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES						N/A	SPECIALTIES	
419702 05131 Beacon 2 EUSA C2 SPECIALTIES 419703 05132 Beacon 3 EUSA C2 SPECIALTIES 415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES	41512	9 05129		EUSA		H/A	SPECIALTIES	
415133 05133 Beacon EP-1 EUSA N/A SPECIALTIES	41970	2 05131		EUSA		CS	SPECIALTIES	
	41513	3 05132				N/A	SPECIALTIES	
	41513	4 05134						

				HAZARD WARNING	PLANT	
PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	CODE	LOCATION	FURINO
437031 415137	05135	Beacon Q 2 5137 EP Grease	EUSA	N/A	SPECIALTIES	
415140	05137 05140	Exxon Mill Grease	EUSA EUSA	630	SPECIALTIES SPECIALTIES	
415142	05142 05144	Exxon 40/40 Grease 5144 EP Grease 1	EUSA	N/A	SPECIALTIES	
415146	05146	5146 FP Grease	EUSA	C2 C2 N/A	SPECIALTIES	
455151 455152	05151	Lidok EP 0	EUSA	N/A N/A	SPECIALTIES	
455153	05146 05151 05152 05153 05154	Lidok EP 2	EUSA	W/A	SPECIALTIES	
475154 425158	05154	5154 EP Grease	EUSA	CZ	SPECIALTIES	
425160	05158 05160	5160 Chassis Grease	EUSA	C2 C2 N/A	SPECIALTIES	
415160	05160	Lidok EP 0 Lidok EP 1 Lidok EP 2 S154 EP Grease Rolubricant 2 S160 Chassis Grease 529 Maralube Moly Grease	EUSA	N/A	SPECIALTIES	
415160 255164 415172	05164 05172	Ronex MP Uni rex N2	EUSA	N/A N/A	SPECIALTIES	
415173	05173 05182	Unirex N3 Unirex S2	EUSA	N/A	SPECIALTIES	
415173 415182 425187	05187	Exxon Epic EP 102	EUSA	N/A C1	SPECIALTIES	
41518/	05187	Epic EP 102	EUSA	C1 C1 C2 N/A	SPECIALTIES SPECIALTIES	
415188 415194	05188 05194	Ronex Extra Duty I	EUSA	N/A	SPECIALTIES	
415195 450706	05195	Ronex Extra Duty Moly	EUSA	N/A	SPECIALTIES	
415165	05264 05265	5265 Thread Compound	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA	CZ	SPECIALTIES	
450700	05267	Thredkote 709	FUSA	CZ	SPECIALTIES	
475372	05370 05372	Exxon Epic EP 102 Epic EP 102 OP 3210 E Grease Ronex Extra Duty I Ronex Extra Duty Moly Thredkote 706 5265 Thread Compound Thredkote 709 Spartan EP 68 Spartan EP 150	EUSA	CZ CZ CZ N/A N/A	SPECIALTIES	
475373	05372 05373 05374	Spartan EP 220 Spartan EP 320	EUSA	N/A	SPECIALTIES	
475370 475372 475373 475374 475375 475376 475377	05374	Spartan EP 460	EUSA	N/A N/A	SPECIALTIES	
475376	05375 05376	County Ed COD	EUSA	N/A	SPECIALTIES	
413400	05377 05400	Enmist EP 100	EUSA	N/A N/A	SPECIALTIES	
415404 415410	05404 05410	Enmist EP 460	EUSA	N/A	SPECIALTIES	
415430	05430	Spartan EP 2200 Ermist EP 100 Enmist EP 460 Mist 011 EP 220 5430 Gear 011 85W-90	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA	N/A N/A	SPECIALTIES	
255431 415451	05431	Gear 011 85W-140	EUSA	H/A	SPECIALTIES	
255475	05451 05475	Gear 011 85W-140 logear EP 100 Gear 011 GX 80W-90	EUSA	N/A	SPECIALTIES	
255478 415485	05478	Gear 011 GX 85W-140 5485 Gear 011 80W-80	EUSA	N/A N/A	SPECIALTIES	
456089	05485 05504	Pennztac Fluid 3000	EUSA	N/A	SPECIALTIES SPECIALTIES	
415504 456005	05504	5504 Gear Fluid 4K	EUSA	N/A	SPECIALTIES	
455504	05504 05504 05506	Surett Fluid 4K Onyx EP MS	EUSA	N/A N/A	SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES SPECIALTIES	
456011	05506	Pennztac Fluid 5000	EUSA	N/A	SPECIALTIES	
456010 456086	05506 05602	Surett Fluid 6K Surett N 26K	EUSA	N/A C3	SPECIALTIES	
456087	05603	Surett N 80K	EUSA	C3	SPECIALTIES	
456088 415609	05604 05609	Surett N 270K Gear Cover Fluid 6	EUSA	C3 C3 C3 V1	SPECIALTIES SPECIALTIES SPECIALTIES	
455610	05610	Gear Cover Fluid Arctic	EUSA	DCZ	SPECIALTIES	
455611 455612	05611 05612	Gear Cover Fluid 21 Gear Cover Fluid FS-21 Special	EUSA EUSA	N/A N/A	SPECIALTIES	
455621 315702	05621	Elbac Fluid 24	EUSA EUSA	N/A	SPECIALTIES SPECIALTIES	
315703	05702 05703	Exxmar XP Exxmar XA	EUSA	N/A N/A	SPECIALTIES	
315704	05704	Exomar 12TP 30	EUSA	N/A	SPECIALTIES	
315705 315706	05705 05706	Exxmar 12TP 40 Exxmar 12TP 50	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
315707 315708	05707	Exxmar 24TP 30	EUSA	N/A	SPECIALTIES	
315709	05708 05709	Exxmar 24TP 40 Exxmar 24TP 50	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
315710	05710	Exxmar 30TP 30	EUSA	N/A	SPECIALTIES	
315711 315712	05711 05712	Exxmar 30TP 40 Exxmar 30TP 50	EUSA EUSA	N/A N/A	SPECIALTIES	
315713	05713	Exxmar 40TP 30	EUSA	N/A	SPECIALTIES	
315714 315715	05714 05715	Exxmar 40TP 40 Exxmar 40TP 50	EUSA EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
415716	05716	5716 Polyurea Grease	EUSA	N/A	SPECIALTIES	
315718 315719	05718 05719	Exxmer X22 Exxmer X60	EUSA	N/A N/A	SPECIALTIES SPECIALTIES	
315720	05720	Exxmar X70	EUSA	N/A	SPECIALTIES	

			U47400	
PRODUCT FORMULA	PRODUCT DESCRIPTION	SUPPLIER	WARNING CODE	PLANT LOCATION FURINO
315721 05721 425730 05730 437034 05758 437037 05759 435760 05760 435761 05761 315822 05822 170370 07037 358258 08258 418678 08678 418679 08679 318680 08680 418681 08681 348682 08682 348683 08683 418684 08684 348685 08685 318696 08696 318697 08697 138698 08698 418699 08699 318700 08700 368701 08701 358702 08702 318703 08703 318704 08704 218705 08705 138706 08706 138707 08707	PRODUCT DESCRIPTION Exmar X90 Polyrex P Norva 340 Norva 340 Norva EP 375 Grease Slop Oil Grease Runout 5822 Cylinder Oil 70 7037 OD Asphalt WS 2634 Engine Oil WS 2650 Grease WS 2651 Grease WS 2651 Grease WS 2652 Cutting Oil WS 2653 Punching Oil WS 2653 Punching Oil WS 2654 Crease WS 2655 Ouench Oil Concentrate WS 2657 Cutting Oil WS 2656 Grease WS 2670 RR Engine Oil 20V-40 WS 2671 RR Engine Oil 20V-40 WS 2671 RR Engine Oil 20V-40 WS 2678 Grease WS 2672 Process Oil WS 2668 Cold-Rolling Oil WS 2667 Solvent WS 2668 Cold-Rolling Oil WS 2674 Scrubber Oil WS 2675 Scrubber Oil WS 2676 Solvent WS 2676 Solvent WS 2677 Solvent OOG27 Varsol 1 OOG42 46 Fuel 0.3% Oil83 Teresstic 220 Oi956 Exxon ATF O5363 Spartan EP 220 API Separator Sludge Asbestos Wastes Chromate Sludge, Cooling Tower Waste Clarified Oil Tank Bottoms Leaded Gasoline Tank Bottoms PCB Wastes Process Sewer Water Slop Oil Unleaded Gasoline Tank Bottoms Leaded Gasoline Tank Bottoms PCB Wastes Process Sewer Water Slop Oil Unleaded Gasoline Tank Bottoms Leaded Gasoline Tank Bottoms Leaded Gasoline Tank Bottoms Leaded Gasoline Tank Bottoms PCB Wastes Process Sewer Water Slop Oil Unleaded Gasoline Tank Bottoms PCB Wastes Process Sewer Water Slop Oil Unleaded Gasoline Tank Bottoms CB/OEM Antifreeze/Coolant Durad (R) 155 Durad (R) 150 Tru-Test All-in-One Carpet Cleaner HEA Clear Seal 150 Span 80 Acidless Tallow, Acidless Tallow Oil NA-SUL BSN NA-SUL EDS	EUSA EUSA EUSA EUSA EUSA EUSA EUSA EUSA		
	All Purpose Cleaner Furniture Polish 5172	Liberty Liberty Lubrizol Corp	CEZ	SPECIALTIES * SPECIALTIES SPECIALTIES
	Anglamol 32 ECA-8515 ENJ 8295 Lubrizol 67	Lubrizol Corp Lubrizol Corp Lubrizol Corp Lubrizol Corp	DC9 CE1 DC12 V5	SPECIALTIES * SPECIALTIES * SPECIALTIES SPECIALTIES

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING COOE	PLANT LOCATION	FURINO
		Lubrizol 75A	Lubrizol Carp	CEL	SPECIALTIES	
		Lubrizol 859	Lubrizol Corp	N/A	SPECIALTIES	
		Lubrizol 1375 Lubrizol 3220A	Lubrizol Corp Lubrizol Corp	CEZ N/A	SPECIALTIES SPECIALTIES	
		Lubrizol 3715	Lubrizol Corp	DC12	SPECIALTIES	
		Lubrizol 5003	Lubrizol Corp	N/A	SPECIALTIES	*
		Lubrizol 5033	Lubrizol Corp	CEZ	SPECIALTIES	
		Lubrizol 5044 Lubrizol 5130	Lubrizol Corp Lubrizol Corp	CE1 CE2	SPECIALTIES SPECIALTIES	
		Lubrizol 5178	Lubrizol Corp	OC8	SPECIALTIES	
		Lubrizol 5198	Lubrizol Corp	008	SPECIALTIES	
		Lubrizol 5788 Lubrizol 6268	Lubrizol Corp	DC8	SPECIALTIES	
		Lubrizol 6501	Lubrizol Corp Lubrizol Corp	DC10 N/A	SPECIALTIES	
		Lubrizol 6766A	Lubrizol Corp	CE2	SPECIALTIES	
		LZ.3220A Code 10556	Lubrizol Corp	N/A	SPECIALTIES	
		LZ.3715 Code 225137 LZ.5003, Code 10534	Lubrizol Corp Lubrizol Corp	DC12 N/A	SPECIALTIES SPECIALTIES	
		LZ.5178J Code 10169	Lubrizol Corp	CE2	SPECIALTIES	
		LZ.6268 Code 10544	Lubrizol Corp	DC10	SPECIALTIES	
		LZ.859, Code 82660 OS#86917	Lubrizol Corp Lubrizol Corp	N/A	SPECIALTIES	
		Mayoo No. 1 Lard 011	Mayco Otl & Chem	N/A	SPECIALTIES SPECIALTIES	
		na temor se	Mayco 011 & Chem	N/A	SPECIALTIES	3.5
		Bullseye Spray Pattern Indicator Copper Alloy CA102	Hiliken Chem	V6	SPECIALTIES	
		Mobilad C-603	Millard Utility Mobil Oil Corp	CE2	SPECIALTIES SPECIALTIES	
		PC-1244 Defoamer	Monsanto Co.	DC8	SPECIALTIES	
		10% Zinc Hap-All	Mooney Chemical	DC6	SPECIALTIES	2
		Sodium Chloride Eliminox Oxygen Scavenger	Morton Thiokol	N/A	SPEC & UTIL UTILITIES	
		Nalco 1720 Oxygen Scavenger	Nalco		UTILITIES	
		Naico 8328 Corrosion Inhibitor	Nalco		UTILITIES	
		Nalcolyte 603 Coagulant Solution SO222P Indicator (PH)	Nalco		UTILITIES	
		Solution SO234 TDS-1	Nalco Nalco		UTILITIES	
		Solution SO260 Special Indicat	Nalco		UTILITIES	
		Solution SO274 H-1 Titrant HIG	Nalco		UTILITIES	
		Solution S0275 H-2 Total Hardn Solution S0277 H-3 Total Hardn	Nalco Nalco		UTILITIES	
		Solution SO280 H-7 Calcium Har	Nalco		UTILITIES	
		Solution S0295 Nalco 39-2	Naico		UTILITIES	
		Solution S0297 3000 Micromho S Solution S0408 PH 10.0 Buffer	Malco		UTILITIES	
		Solution SO613 ST-1	Nalco Nalco		UTILITIES	
		Solution SO614 ST-2	Nalco		UTILITIES	
		Solution S0624 Sodium Hydroxid	Nalco		UTILITIES	
		Solution SO635 PA-1 Solution SO636 PA-2 Solution SO682 TR-2	Nalco Nalco		UTILITIES	
		Solution SO682 TR-2	Nalco		UTILITIES	
		Solution S0685 TR-5	Nalco		UTILITIES	
		Solution S0726 Hydrochloric Ac Solution S0729 Deignization Re	Nalco		UTILITIES	
		Transport-Plus 7200	Nalco Nalco		UTILITIES	
		Tri-Act 1801 Inhibitor	Nalco	122	UTILITIES	5
		Instant-Lok	Nat'l Starch & Chem	C5	SPECIALTIES	
		Lestoil Heavy Duty Cleaner Citrikleen	Noxell Corp Penetone Corp		SPECIALTIES SPECIALTIES	
		Petroleum Sulfonate	Penreco	CE2	SPECIALTIES	
		Petrosul H-60 Sod Sulfonate	Penreco		SPECIALTIES	
		CAO-1 Antioxidant Liquid Caustic Soda, 50%	PMC Specialties PPG	N/A	SPECIALTIES	
		BT-2	Reilly Ind.	N/A	SPECIALTIES	
		8T-112	Reilly Ind.	N/A	SPECIALTIES	
		Rhodorsil Fluid 47V 12500	Rhone-Poulenc	N/A	SPECIALTIES	
		Stainless Steel Cleaner Acryloid 1019 011 Additive	Rite-Off Rohm & Heas Co	H/A	SPECIALTIES SPECIALTIES	
		Acryloid 150 011 Additive	Rotes & Haas Co	N/A	SPECIALTIES	
	3 1	Acryloid 917 011 Additive	Rolm & Haas Co	N/A	SPECIALTIES	
		Acryloid 917T ILC 011 Additive	Rohm & Haas Co	N/A	SPECIALTIES	
		Acryloid 954 011 Additive Acryloid HF833 011 Additive	Rohm & Haas Co Rohm & Haas Co	N/A	SPECIALTIES SPECIALTIES	
		ACT TISTO THOSE OF ACCULATE	AUTH G HAGE CO	177.53	AL PRELIEF PRO	

PRODUCT	FORMULA	PRODUCT DESCRIPTION	SUPPLIER	HAZARD WARNING CODE	PLANT LOCATION	FURINO
		Plexol 917 011 Additive	Rohm & Haas Co	N/A	SPECIALTIES	
		Safety-Kleen 105 Parts Working Solvent	Safety-Kleen	DC13	SPECIALTIES	
		Isonox 103	Schnectady Chem	N/A	SPECIALTIES	
		BH-38	Spartan Chem	W/W	SPECIALTIES	•
		Liquid Hand Cleaner			COECTALITIES	
		SO-20 All Purpose Cleaner (Aerosol)	Spartan Chem		SPECIALTIES	
		SO-20 (8ulk)	Spartan Chem		SPECIALTIES	
			Spartan Chem		SPECIALTIES	0
		Sterigent	Spartan Chem		SPECIALTIES	3
		InT Tub & Tile Cleaner	Spartan Chem	200	SPECIALTIES	
		Dascolene 794	Stuart-Ironsides	N/A	SPECIALTIES	12
		Dascolene 3794	Stuart-Ironsides	0.50	SPECIALTIES	
		Sturaco FM 7098	Stuart-Ironsides	N/A	SPECIALTIES	
		77083 TLA-555	Texaco	N/A	SPECIALTIES	
		Acetylene	Union Carbide		SPECIALTIES	•
		Diethylene Glycol	Union Carbide		SPECIALTIES	
		Diethylenetriamine	Union Carbide	COZ	SPECIALTIES	
		Oi-, Tri-, & Tetraethylene Glycol	Union Carbide	CE8	SPECIALTIES	
		Ethylene Glycol, Polyester & ICF Grade	Union Carbide		SPECIALTIES	
		Ethylene Glycol-Iron & Chloride Free	Union Carbide	V8	SPECIALTIES	
		Propane	Union Carbide	137	SPECIALTIES	1.0
		UOP NO. 225 Antioxidant	UOP	CE2	SPECIALTIES	
		NASUL ZS	Vanderbilt, R. T.		SPECIALTIES	
		Na-Sul EDS	Vanderbilt, R. T.		SPECIALTIES	
		Na-Sul- BSN	Vanderbilt, R. T.		SPECIALTIES	
		Vanlube 691	Vanderbilt, R. T.	CE2	SPECIALTIES	
		Vanlube 81	Vanderbilt, R. T.	N/A	SPECIALTIES	
		Vaniube 848	Vanderbilt, R. T.	CEG	SPECIALTIES	70
		Vanlube SS	Vanderbilt, R. T.	CES	SPECIALTIES	
		Petronate CR		N/A		
			Vitco	N/A	SPECIALTIES	
		Petronate HL	Vitco		SPECIALTIES	
		Sodium Petroleum Sulfonate	Vitco		SPECIALTIES	
		Sgl Strike Correctable Typewriter Ribbon			SPECIALTIES	
		Lift-Off Correction Tape	Xerox Corp.		SPECIALTIES	-
		Zico AA-5104	Ziegler Chem & Mineral		ASPHALT	

APPENDIX M

Hazardous Substance Discharges

APPENDIX N POLLUTION DATA

APPENDIX N

CONTENTS

	Page
POLLUT	ΓΙΟΝ DATA
	<u>ATTACHMENTS</u>
N-I.	Hydrotechnic Corporation Engineers. 1958. Report on Groundwater Conditions. May 1958 Report to Esso Standard Oil Company, May 1958.
N-II.	Leggette, Brashears and Graham, Inc. 1974. Letter from M. Schultz to D. Petrow, Exxon Company, U.S.A., May 21, 1974.
N-III.	Leggette, Brashears and Graham, Inc. 1974. Status Report of Shallow Ground-Water Contamination Investigation, Exxon Company, U.S.A., Bayonne Plant, New Jersey, September 20, 1974.
N-IV,	Leggette, Brashears and Graham, Inc. 1974. Status Report for October 1974 Shallow Ground-Water Contamination Investigation, Exxon Company, U.S.A., Bayonne Plant, New Jersey, November 6, 1974.
N-V.	Dames and Moore. 1979. Bayonne Terminal and Chemical Plant Hydrogeologic Studies for Exxon Company, U.S.A., July 16, 1979.
N-VI.	Roy F. Weston, Inc. 1980. Letter from A. Thomas to M. Kenney, Exxon Company, U.S.A. Re: Subsurface Oil Recovery Program, Bayonne Plant - Meeting on June 1980, June 13, 1980.
N-VII.	Roy F. Weston, Inc. 1981. Letter to D. Petro, Exxon Company, U.S.A. Re: New Wells for the Low Sulphur Area, March 4, 1981.
N-VIII.	Roy F. Weston, Inc. 1981. Letter from A. Thomas to J.B. Wells, Exxon Company, U.S.A. Re: Maintenance of Oil Recovery Wells, March 9, 1981.
N-IX.	Roy F. Weston, Inc. 1985. Subsurface Oil Recovery and Monitoring Program Pier 3, Exxon Company, U.S.A., June 4, 1985.

ATTACHMENTS (Continued)

- N-X. Roy F. Weston, Inc. 1986. Letter from A. Thomas to D. Petro, Exxon Company, U.S.A., July 15, 1986.
- N-XI. Roy F. Weston, Inc. 1986. Letter to D. Petro, Exxon Company, U.S.A. Re: Letter Dated August 15, 1986 on Piers 6 and 7 Area, August 19, 1986.
- N-XII. Roy F. Weston, Inc. 1986. Letter from A. Thomas to D. Petro, Exxon Company, U.S.A., September 23, 1986.
- N-XIII. Roy F. Weston, Inc. 1989. Letter from H.A. Anwar to D. Petro, Exxon Company, U.S.A. Re: Meeting Summary, Discussion of Well Monitoring Results and Overall Environmental Strategy, Exxon Bayonne Refinery, Bayonne, New Jersey, January 26, 1989.
- N-XIV. Roy F. Weston, Inc. 1989. Fourth Quarter Monitoring Report (1988), Exxon U.S.A., Bayonne Facility, Bayonne, New Jersey, March 27, 1989.
- N-XV. Roy F. Weston, Inc. 1989. First Quarter Monitoring Report (1989), Exxon U.S.A., Bayonne Facility, Bayonne, New Jersey, May 1, 1989.
- N-XVI. Roy F. Weston, Inc. 1989. Second Quarter Monitoring Report (1989), Exxon U.S.A., Bayonne Facility, Bayonne, New Jersey, August 21, 1989.
- N-XVII. Roy F. Weston, Inc. 1989. Letter from H.A. Anwar to D. Petrow, Exxon Company, U.S.A. Re: Third Quarter 1989 Monitoring Data for the Exxon Bayonne Facility, October 27, 1989.
- N-XVIII. Sandaq, Inc., P.C. 1986. Sewer Investigation Report for Toxic Substances, April 27, 1986.
- N-XIX. ICF Kaiser Engineers, Inc. 1992. Additional Preliminary Results from Bayonne Terminal Sampling, General Tank Farm and Tank Farm #3, July 29, 1992.

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APPENDIX N

POLLUTION DATA

This section has been prepared for the November 27, 1991 Administrative Consent Order (ACO), Appendix B, Section IIB, Item 14. The ACO requests "a list of all current or previously developed data and information concerning pollution at or emanating from the site, including sampling and monitoring data."

Previous environmental investigations have been conducted at the Site, and the reports documenting the investigations are attached. Brief summaries of these reports have been provided in Section 7 of the Site History Report (Geraghty & Miller, Inc. 1993).

The New Jersey Department of Enviornmental Protection and Energy (NJDEPE) Site Inspection Report (1992) and the Quarterly Report submitted by Exxon in October 1992, in accordance with the ACO, were not included because the documents are already in the NJDEPE's possession.

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ATTACHMENT N-I

Hydrotechnic Corporation Engineers. 1958.
Report on Groundwater Conditions.
May 1958 Report to Esso Standard Oil Company, May 1958.

...

Esso Standard Oil Company
Bayonne Refinery
New Jersey

REPORT

on

GROUNDWATER CONDITIONS

Engineers
32 East 57th Street
New York 22, N.Y.

CONTENTS

I.	INTRODUCTION

- II. REFINERY WATER REQUIREMENTS
- III. GROUNDWATER RESOURCES
- IV. RECLAMATION OF SEWAGE AS WATER SUPPLY
- V. DISPOSAL OF ACID WASTE IN GROUNDWATER
- VI. SUMMARY

PLATES

No.	Description
1	GEOLOGY OF GENERAL AREA
2	GENERAL PLAN
3	GEOLOGIC PROFILE - GENERAL TANK FIELD
4	GEOLOGIC PROFILE - NORTH & EAST OF REFINERY
5	GEOLOGIC PROFILE - STATEN ISLAND
6	INJECTION WELL - TYPICAL DETAIL

I. INTRODUCTION

The Esso Standard Cil Company Refinery in Bayonne, New Jersey, is a manufacturing plant and terminal facility of approximately 120,000 barrels per day output. Because of high costs for its fresh water supply, and the threats of curtailment of this supply during the dry months, the Refinery engaged the Hydrotechnic Corporation to investigate the possible development of additional fresh water supplies. More specifically, the objective was to determine the feasibility of extracting between 1,000 and 2,000 gallons per minute (gpm) of fresh water from ground sources.

In addition, the feasibility of disposing of acid wastes (75 gpm) by injection into the ground was to be investigated. On its own initiative, and with permission of Refinery authorities, Hydrotechnic investigated the practicality of reclaiming sewage as a source of non-brackish water supply.

The Hydrotechnic Corporation wishes to acknowledge the willing cooperation received from Mesers. R. B. Nerf, E. DiCorcia and other personnel of the Eayonne Refinery.

Pertinent information was obtained from the following officials: Mr. N. E. Johnson, New Jersey State Geologist; Mr. Lang, U.S. Geological Survey, Trenton, New Jersey; Mr. N. J. Lusczynski, U.S. Geological Survey, Mineola, New York; Mr. Forman, New Jersey Public Health Engineer; and Messrs.

Lubetkin, Moeller and Sopko of the Passaic Valley Sewer Authority, from all of whom courteous attention was received.

II. REFINERY WATER REQUIREMENTS

The Bayonne Refinery satisfies its water requirements with two types of water, one fresh and one brackish (salty). The source of fresh water is the City of Bayonne municipal water system and the brackish water is pumped from the Kill van Kull, south of the Refinery.

A. BAYONNE CITY WATER

The fresh water is used primarily (about 85%) for the production of steam, with the remainder being utilized in cooling tower makeup, for process and in the sanitary system. Currently, the average volume of City water purchased by the Refinery is about 1.7 million gallons per day (1, 200 gpm). The present rate is about \$0.48 per 1,000 gallons. The total expenditure for City water for the past twelve months was approximately \$300,000.

Chemical analysis of the municipal water indicates the following properties present, in parts per million (ppm):

	ppm
Dissolved Oxygen	2-3
Alkalinity	40
pH	9
Hardness	42
Total Solids	78
Chlorides	10
Manganese	. 07
Iron	. 26
Silica	3
Calcium	7
Magnesium	2.5
Sulfates	16

B. KILL VAN KULL WATER

The brackish water from the Kill is mainly utilized as cooling water in a once-through system. This low pressure salt water system is tapped in cases of fire by a high pressure system which utilizes salt water for fire control. A recently constructed water intake and pump station keeps the Refinery supplied with all the brackish water it can use. At present, a total of 21.6 million gallons are pumped daily. The only treatment that this salt water receives is chlorination to keep the growth of slime to a minimum.

C. OTHER POSSIBLE SOURCES OF WATER

Due to the previously discussed high cost of fresh water, together with recent serious threats of curtailment of fresh water supply during the drought months, the Refinery found it advisable to investigate the possible development of alternate or supplemental fresh water supplies.

The feasibility of abstracting fresh water from the ground by means of pumped wells on Refinery property was the first possible source to be considered. The reported existence of fresh water wells within the Refinery several decades ago, and recent soil borings, indicated a possible existence of fresh water supplies underground.

An alternate source of supply could be the reclamation of a portion of the sewage discharging through the Passaic Valley Sewer Authority's terminal structure, which is located in New York Bay, about one mile east of the Refinery.

Whatever source of fresh water supply the Refinery developed, its potable and sanitary water requirements would continue to be purchased from the Bayonne municipal system.

III. GROUNDWATER RESOURCES

A. GEOLOGY

1. General Area

The Refinery, located on Constable Hook in Bayonne, New Jersey, is bounded by brackish water on three sides. New York Bay to the north and east, and Kill van Kull to the south.

The Constable Hook area is underlain by three Pre-Pleistocene formations.

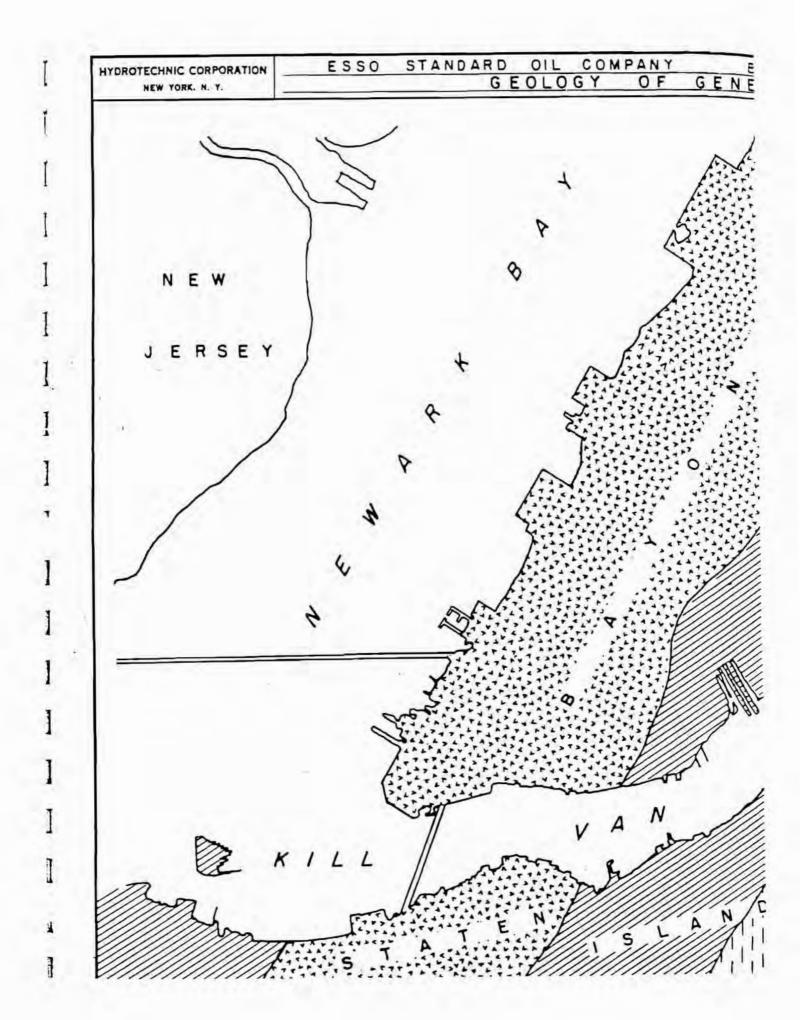
The eastern tip of the Hook consists of Post Ordovician serpentine, a continuation of the serpentine formation from Staten Island, which extends northward into eastern Hoboken. To the west, the underlying formation is the Triassic Palisades diabase, which originates along the west banks of the Hudson River, continues through Bayonne proper and terminates on Staten Island. In between these two igneous rock formations is an area of the Triassic (Newark Group)

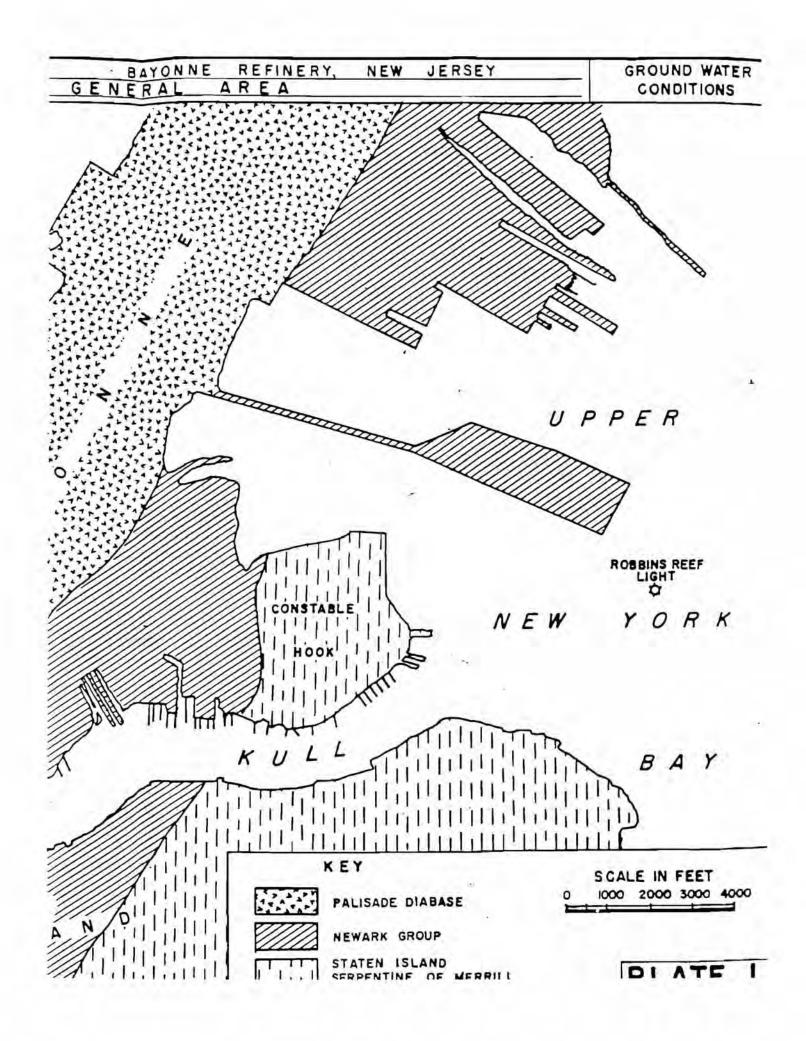
Stockton formation, which is generally gray feldspathic sandstone (arkose),

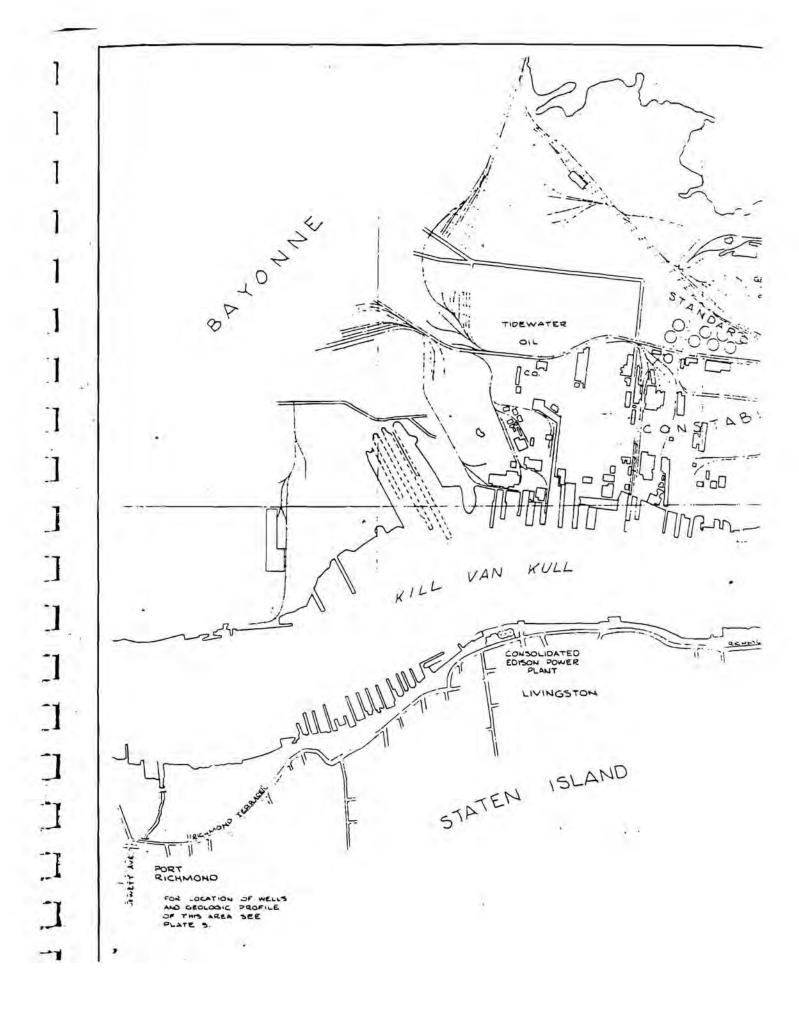
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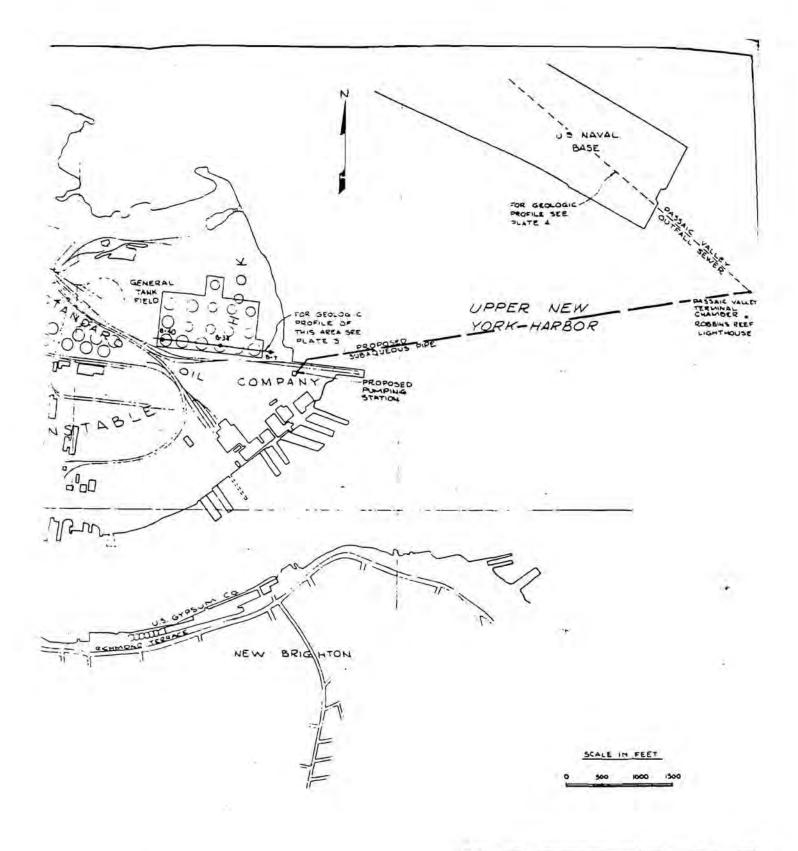
Drift (Wisconsin) composed of sand and gravel plains. These unconsolidated deposits contain, in general, large quantities of ground water which readily yield water to properly constructed wells.

Since Constable Hook is bounded on the west and east by the previously mentioned igneous rock formations, and on the northeast and south by the previously discussed brackish water, any fresh water recharge would have to be of strictly local origin.



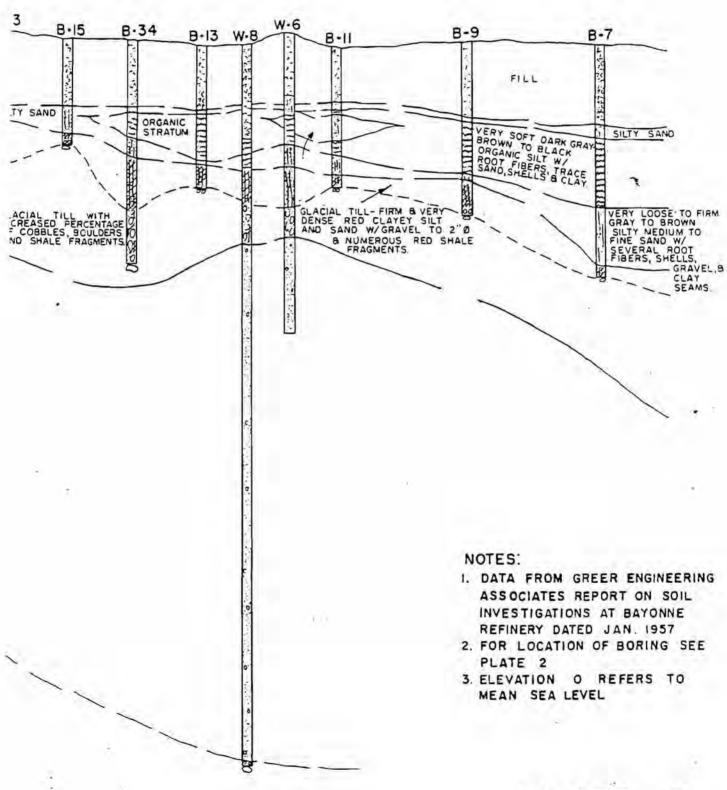






a (VISIONS		ESSO STANDARD OIL COMPANY
+	MIT	BAYONNE REFINERY, NEW JERSEY
i.	-	GROUND WATER CONDITIONS REPORT
1		GENERAL PLAN
0		HYDROTECHNIC CORPORATION
		OMCARD BY LP DATE: MAY 1938
-		APPROVED SCALE IS SHOWN

BAYONNE	REFINER	Y, NEW	JERSEY	GROUND WATER
ERAL TANK	FIELD	AREA		CONDITIONS



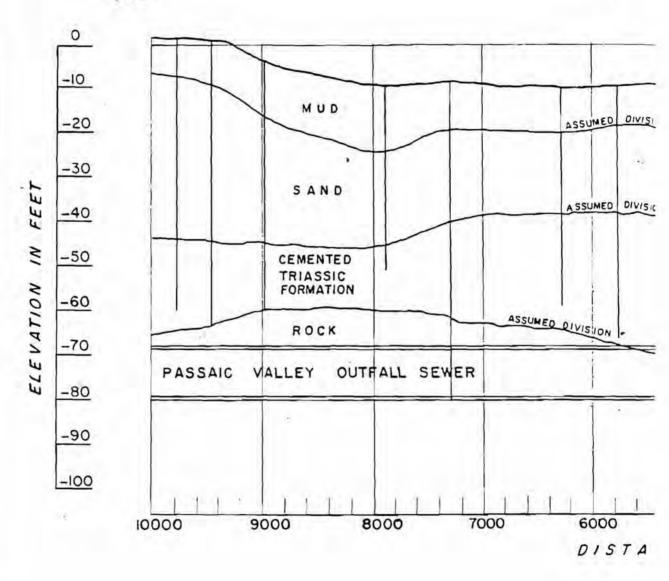
STANDARD ESSO OIL COMPANY HYDROTECHNIC CORPORATION GEOLOGIC PROFILE: GENERAL NEW YORK. N. Y. 15 W-5 B-33 8-31 W-4 W-3 B-40 W-1 B-32 В. 10 W-9 FILL-VERY LOOSE
TO LOOSE BLACK
INCINDERS WISHTY
SAND, CONCRETE
FRAGMENTS BRICKS,
WOOD B GRAVEL 5 DARK 0 SILTY SAND, TRA. GRAVEL ISILTY SAND LOOSE ORGANIC STRATUM -5 **在大学** 100 Extens. GLACIAL SAND -10 GLACIAL TILL -15 GLACIAL THE INCREASED OF COBBLES AND SHALE -20 -25 VERY DENSE RED-BROWN FINE TO COARSE SAND WITH GRAVEL TO 1/2 Ø WITH SMALL POCKETS OF HARD CLAYEY TILL. (GRAVEL COARSER WITH DEPTH) -30 -35 > -40 ココココココココココ -45 -50 -55 -60 -65 VERY HARD DARK GRAY & GREEN SILT AND CLAY, MICACEOUS & BLOCKY -70 -75 -80 BOULDERS, AND COBBLES, MOSTLY DIABASE WITH SOME BLACK SHALE, WITH GRAVEL B. SAND. -85 -90 -95 -100

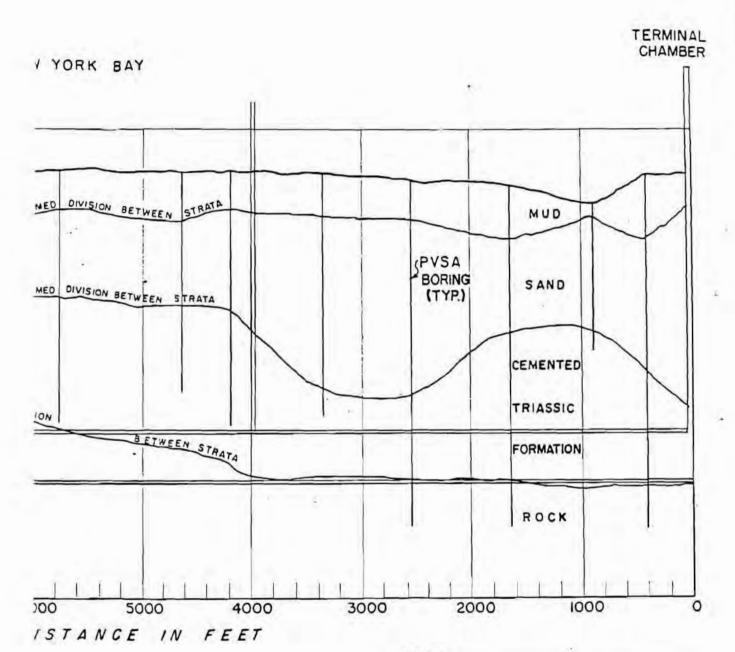
HYDROTECHNIC CORPORATION ESSO STANDARD OIL COMPANY

GEOLOGIC PROFILE: NORTH AND

JERSEY CITY

NEW YORK





NOTES:

- I. DATA FROM BORINGS FOR PASSAIC VALLEY SEWERAGE AUTHORITY OUTFALL FROM JERSEY CITY TO THE TERMINAL CHAMBER
- 2. U.S. NAVAL BASE AREA OF FILL NOT SHOWN
- 3. ELEVATION O REFERS TO MEAN SEA LEVEL

PLATE 4

2. Borings on Refinery Property

Based on borings in the Refinery's General Tank Field, Greer Engineering Associates wrote a report which included a description of the general soil conditions at that part of the Refinery. (See Plates 2 and 3 for location and profile of these borings).

The borings indicate that the entire area is overlain with a layer of fill material varying from 7 to 22 feet in thickness. The fill consists of oily cinders and ashes with intermixed silt, sand, gravel, bricks and concrete fragments, as well as loose miscellaneous rubble.

In some places beneath the fill, there is a thin layer (one to five feet) of silty sand, which in turn is underlain by a compressible organic stratum. The latter is mostly soft black clayey silt, becoming green with depth and containing thin interbedded sand layers with a trace of shells. This stratum varies from zero to thirteen feet in thickness, increasing in depth toward New York Bay.

Below the organic stratum is a glacial till formation, the top of which varies considerably in elevation (+ 2, 8' to - 24'). Similarly, the thickness of this deposit ranges from 9 to 31 feet. The till is a red heterogeneous mixture of boulders, cobbles, gravel, sand, silt and clay. The percentage of boulders, cobbles and gravel increases with depth, with one foot boulders a common size.

Directly beneath the glacial till is a thick stratum of dense red-brown sand with gravel, becoming coarser with depth and containing pockets of hard clayey

till. This stratum, varying from 36 feet in thickness in the west and increasing to 77 feet in the east, is probably the previously mentioned Stratified Drift.

Beneath the drift in the western portion of the Tank Farm there is a stratum of cohesive soil, about 20 feet thick at the western end, with a steep downward slope to the east. The material is an inorganic silty clay, dark gray and green in color and very stiff.

One boring indicated that beneath the silty clay stratum there are at least seven feet of boulders and cobbles with a sand and gravel filler. Although a majority of the boulders were diabase, some black shale was also recovered. Further to the east, the boulders were encountered directly below the Stratified Drift, and recorded as Refusal in the Drilling Contractor's logs.

The borings in the General Tank Field indicate that the groundwater elevation averages about 5.3 below grade. The average elevation of the Tank Farm is almost 11 feet above mean sea level. Thus, the groundwater table is approximately at 5.5 feet above mean sea level, generally sloping toward New York

Bay. In most places, the upper ground water contains a large percentage of oil and other liquid leakage from previous and present Refinery units. Two pumps are in constant service at present, drawing off the crude oil and oil products that are floating on top of the ground water in the Refinery property.

3. Borings North and East of Constable Hook

Geologic conditions to the north and east of the Refinery are shown on Plate

4. This is a profile of the formations encountered in the exploration work for

the Passaic Valley outfall sewer tunnel, which terminates in New York Pay east of Constable Hook.

In general, four separate layers can be discerned. Immediately below the New York Bay is a layer of mud about 15 feet thick; below this is an area of sand some 20 feet thick, which in turn is over a 20-foot thick cemented Triassic formation (hard pan). Bed rock underlies all the other strata.

B. HISTORICAL BACKGROUND

1. Wells in Bayonne Area

On the basis of data available at the U.S. Geological Survey in New Jersey, and at the office of the New Jersey State Geologist, there is no indication of any appreciable amount of fresh water pumped from aquifers in the Bayonne area.

Prior to 1900, a very small amount of ground water was obtained from two sources. One was a privately-owned shallow well (20 - 25 feet deep), and the other was a 600-foot deep well drilled at the Martin Kalbiliesch Chemical Plant.

The Tidewater Oil Company sank two wells, neither of which produced any water. One was an 8-inch diameter well, 231 feet deep. The other was a 6-inch pipe which was driven almost 1,400 feet through beds of sandstone and shale (Triassic; 100 - 1,060 feet deep, and pre-Triassic crystalline rocks; 1,060 - 1,397 feet deep). No fresh water was found at any elevation.

The Standard Oil Company also sank several wells on the Bayonne Chemical Company property, but struck trap rock.

Fecause the geologic formations found at Payonne continue under the Kill van Kull and extend into Staten Island, it is possible that at some time in the Island. The ground surface on Staten Island is about 20 to 40 feet higher than that on Constable Hook, and the recharge area on the Island is quite large. It may have been possible for the sand and gravel under the Kill van Kull to channel fresh water from the Island to the Hook. Brackish water in the Kill could have been sealed off by glacial till and silt, retarding infiltration of salt into the fresh water.

Since Staten Island was the only possible outside area of natural recharge for Constable Hook, the wells and ground water along the north shore of Staten Island were also investigated.

2. Wells on Staten Island

Port Richmond, on Staten Island, is the area which is geologically similar to the area of possible fresh ground water at Constable Hook. According to the U.S. Geological Survey records, several wells in this area pumped fresh water, with a yield for each varying between 250 and 350 gallons per minute. In the vicinity of Richmond Terrace and Jewett Avenue at Port Richmond, information on a total of thirteen wells has been compiled. Detailed data is available on the following seven wells:

Well No.	Owner	Depth	Yield (gpm)	Chlorides (ppn)
1	Clay Smith Textile Corp.	92'	260	15 in 1942
2	Blue White Laundry Co.	74'	350	14 in 1942
3	Stapleton Service Laundry	99'	300	20 in 1942
4	Pontin Literage & Trans. Co.	93'	260	27 in 1939
5	Consolidated Ice Co.	67'	250	16 in 1942
6	Speed King Auto Laundry	40'	low	brackish
7	N. Y. City Board of Trans.	81'	310	••••

For location of above wells see Plate 5.

Of the other wells in this area, the previously mentioned Clay Smith Textile

Corp. owned four other wells ranging in depth between 56 and 92 feet. The Consolidated Ice Co. had two additional wells - one 52 feet and one 59 feet deep.

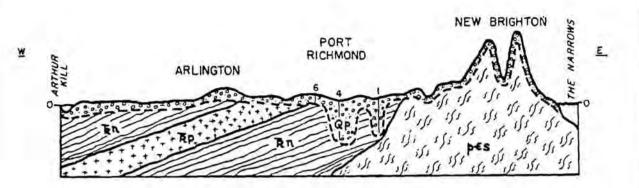
Further to the east along the northern shore of Staten Island additional wells have been found, but none productive. At the Consolidated Edison power plant site across from Platty Kill Creek, there were two wells, both of which have been dry. Further east, rock was encountered fairly close to ground level (at a depth of 40 feet at the U.S. Gypsum plant in New Brighton), and there was no evidence of any productive wells in this area.

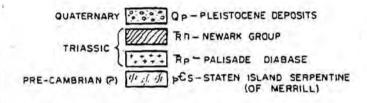
Thus, the serpentine formation to the east of Port Richmond and the Palisades diabase to the west, preclude any fresh groundwater recharge in Eayonne from any area on Staten Island except Port Richmond. (See profile on Plate 5).

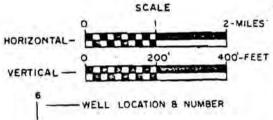
With the dredging of the Kill van Kull to 35 feet below mean sea level, to permit vessels of deep draft to navigate the Kill, the prospect of any possible recharge from Staten Island, including the Port Richmond area, has been eliminated. Data at the N. Y. office of the U.S. Army Corps of Engineers revealed that during the dredging of the Kill in the vicinity of Port Richmond, sand and gravel underlying the normal silt deposits was removed from the bottom of the channel. Any natural fresh water recharge which may have once existed is in most likelihood, at the present time, brackish, since and sands and gravel under the Kill have been exposed to the salt water. Therefore, any fresh ground water abstracted at Constable Hook must be limited to local recharge.

HYDROTECHNIC CORPORATION NEW YORK. N. Y.

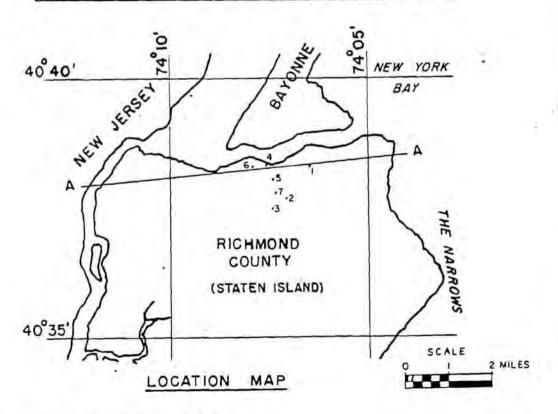
ESSO STANDARD OIL COMPANY BAYONNE REFINERY, NEW JERSEY GROUND WATER







SECTION A-A - NORTH SHORE OF STATEN ISLAND



NOTE: DATA FROM U.S. GEOLOGICAL SURVEY
BULLETIN GW-32 ALBANY, NY, 1953

C. THEORETICAL CONSIDERATIONS

1. Rainfall and Recharge

Local fresh groundwater recharge at the Hook would depend primarily on rainfall, since brackish water bounds the Hook on the north, east and south, while a solid formation of diabase bounds it on the west.

Assuming that the area covered by sand and gravel deposits is about one square mile, and the average annual rainfall is approximately 45 inches, on the basis of an infiltration factor of 40%, the addition to the groundwater supply would be approximately 42 million cubic feet of water per year, or about 115,000 cubic feet per day. This represents an equivalent average yield of about 900,000 gpd. (600 gpm).

Under normal hydrogeological conditions, a 600 gpm figure might be reasonable as an estimate. In the particular case of Constable Hook, the paved areas and storm sewers are likely to decrease the possibility of infiltration. In addition, the upper strata of glacial till, stiff and clayey in character, interferes with the natural percolation and probably causes a substantial amount of the subsurface water to travel laterally and escape into the brackish water bounding the Hook.

For the above mentioned reasons, a 10 percent infiltration rate might be a more accurate estimate. In that case, the total available fresh groundwater supply may be in the order of 150 - 200 gpm.

Under the prevailing physical conditions, a continuous withdrawal of even this smaller flow may cause salt intrusion from the adjacent bodies of water. Assuming there are 600 acres of sand and gravel deposits, with an average depth of 50 feet and an effective void ratio of 0.25, the water volume which could be stored in this deposit would equal about 325 million cubic feet. This is approximately 6,500,000 cubic feet of water per foot of depth. Thus, a one foot drop in ground water would provide 150 - 200 gpm for about 220 days, and could, theoretically, provide enough fresh ground water to last through the dry summer months if there was no salt water intrusion.

This 150 - 200 gpm is probably the most ground water the Refinery could hope to withdraw for any substantial period. This theoretical quantity would be realized if this represented the only withdrawal of ground water in the entire area of Constable Hook. In addition, the well would have to be located as far as possible from the surrounding brackish waters, approximately equidistant from New York Bay and the Kill van Kull, which might not be an entirely suitable location for other reasons.

2. Mechanics of an Aquifer

To predict the exact characteristics of groundwater flow through a heterogeneous mixture of sand and gravel interspersed with clay, is almost impossible. However, by utilizing established hydraulic equations and the data available from tests conducted in similar aquifer conditions, it is possible to predict the approximate actions of ground water when water is abstracted by a well.

Analysis in the previously mentioned <u>Greer Report</u> indicates that the effective grain size in the sand and gravel region below the glacial till strata ranged from 0.10 to 0.30 mm. The depth of this possible fresh water aquifer varied from 31 to 55 feet. Assuming an effective average grain size of 0.20 mm, the coefficient of permeability of the aquifer can be estimated at 600.

The two important effects of withdrawing water from this aquifer are the drawdown of the water table at the point of pumping, and the distance from this point where the original water table will remain relatively unaffected.

In computing the radius of the cone of influence (distance from center of well where the original elevation of the groundwater table is the same after pumping as before), the following figures have been assumed:

q= 215,000 gpd (150 gpm)

p= 600 (permeability)

m= 50 feet (depth of aquifer)

D= 75 feet (depth from groundwater surface to bottom of aquifer)

d'= 8 feet (drawdown in well)

r= 12 inches (radius of well)

The computed radius of influence is approximately 500 feet. A screen at the bottom of the well would require sufficient openings to permit the water to enter at a low enough velocity so as not to carry sand into the well.

From the above analysis, it is evident that a well centrally located on Constable Hook, having a capacity of 150 - 200 gpm, would probably have no salt water intrusion. However, over the long run, if more than one well is pumped, salt water intrusion is almost certain to occur.

3. Shallow Wells

Besides withdrawing some ground water from the sand and gravel deposits below the dense glacial till strata, it may be possible to pump a limited amount of water from the porous deposits overlying the glacial till.

Approximately the same amount of water available from the deeper wells would be available from shallow wells. Since the fresh water recharge is the rainfall on Constable Hook, the ground water pumped from shallow wells would preclude any sustained yield from the deeper wells. Several shallow wells, properly located on the Refinery property, might yield a total flow of 100 - 200 gpm of fresh ground water. A larger withdrawal of fresh water could cause salt water intrusion. The limiting factor would be the lack of adequate storage space for fresh water in the relatively thin layer of material overlying the glacial till. During the drought months, the supply could easily be exhausted causing salt water intrusion.

IV. RECLAMATION OF SEWAGE AS WATER SUPPLY

Since ground water at Constable Hook appears to be an inadequate solution for the Refinery fresh water requirements, the possibility of reclaiming sewage as means of water supply should be given serious consideration. Of the three available sources of supply - the discharges from the sewage treatment plants of Jersey City, of Bayonne and of the Passaic Valley Sewerage Authority, the latter would probably prove the most feasible for reasons discussed further in this chapter.

A. PASSAIC VALLEY SEWERAGE AUTHORITY

An act of the New Jersey State Legislature created in 1902-03, an autonomous agency named the Passaic Valley Sewerage Authority (P. V. S. A.). The purpose of the Authority was to collect, treat and discharge the wastes from the Passaic Valley to Newark Bay. This discharge area was later changed to New York Bay after permission was granted by the U.S. Supreme Court. The Authority received the additional power to police the Valley for any pollution.

Twenty-two municipalities own the Authority, based on the proportion of the total cost of construction for which they paid. Six other groups, two of them industries, rent a proportionate part of the Authority's sewer system. The cost of operating the Authority is divided among the communities served on the basis of the portion that each contributes to total sewage. Metering stations on the P. V. S. A. system keep continuous records of discharges for proper accounting and billing of the communities.

Five commissioners represent the four counties of the Passaic River Valley.

They are appointed by the Governor of New Jersey and are the Authority's highest policy making body. The operations of the P.V.S.A. are carried out under the supervision of the Authority's Chief Engineer, who is responsible directly to the commissioners.

The sewer system of the P. V. S. A., covering the entire Passaic Valley, channels the entire flow to the main pumping station on the west shore of Newark Bay. The total flow is pumped through a primary treatment system and the sludge is loaded onto barges and disposed of at sea. The clarified supernatant (liquid) flows by gravity through a tunnel underneath Bayonne and discharges to New York Bay through a terminal chamber located by Robbins Reef. The New York Bay provides the necessary dilution for the sewage.

The Passaic Valley Sewerage Authority has been in continuous operation since 1924. Construction actually started in 1910. In 1957, the Authority's total flow at the main pumping station in Newark averaged 187 million gallons per day. The average daily flow for 1953 is expected to be even greater. If the Refinery were to tap and treat a portion of this sewage, an adequate water supply could be guaranteed for years.

B. CHARACTERISTICS OF THE SEWAGE EFFLUENT

The laboratory at the Bayonne Refinery performed chemical analysis on samples of the P. V.S.A. effluent. The results, in parts per million, were as follows:

91

Determinations	1st Samp	ole — .	2nd Sample ppm
Alkalinity	0	JU was	: (C. +139 (M. D.)
Hardness	180	or the spile	164
Dissolved Solids	900		
Chlorides	182		169
Sulfides	0		**
Phosphates	0		7 · · ·
Sulfates			68
3.O.D.	••		230 _
tracity	< 0.5	P. P. M.	7/9/:963 (Gold

Certain characteristics of this effluent would have to be treated before it could be used as boiler feed and process water. The settleable and suspended solids would have to be removed and the hardness reduced. The oxygen demand of this waste water would be an advantage, since it would eliminate the need for deaeration. This supply would probably require some chlorination to control slime formations.

Once the sewage was obtained from the P. V. S. A. terminal chamber and brought to the Refinery, its treatment would be a relatively simple and inexpensive operation.

C. PROBLEMS OF OBTAINING SEWAGE

The legal and political implications of acquiring the P. V. S. A. effluent are beyond the scope of this report, but are mentioned at this point since they are important considerations. It is largely due to the political aspects, as well as engineering factors, that the P. V. S. A. effluent would probably be a preferable source of water, rather than the discharges of the Bayonne or Jersey City Sewage Treatment Plants.

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^{*} Records of the P. V. S. A. revealed that the total solids content in the effluent averaged about 900 ppm and dissolved solids have not exceeded 2,000 ppm at any time.

For the purposes of this report, Hydrotechnic made no attempt to determine the feelings of the P. V. S. A. people on this plan. The conversations held with Mr. Lubetkin, Chief Engineer of the Authority, and his immediate subordinates, did indicate that, as a first reaction, such a plan was not impossible.

If the P. V. S. A. were to allow the Refinery to tap its effluent at the terminal chamber off Robins Reef, a 12-inch diameter, 6,000-foot subaqueous pipe would be needed to deliver the sewage to the Refinery property. The effluent at the terminal chamber has a head above the level of the sea in order to insure the discharge of the sewage through the diffusion nozzles into New York Eay.

This head would be sufficient to convey the sewage to the Refinery. The pumping station ahead of the treatment works would not be excessively deep or costly.

A very approximate estimate of the cost of installing this subaqueous pipe and tapping into the existing terminal chamber is \$200,000.

In order to secure from the P.V.S.A. the right for the Refinery to use a portion of the sewage, a nominal charge would have to be worked out. The rate would probably be only a fraction of the cost of fresh water to the Refinery at present.

Besides signing a contract with the P.V.S.A., the Refinery would have to obtain approval and permits from certain other governmental agencies or authorities. The U.S. Army Corps of Engineers would be one of these.

Once the sewage was made available at the Refinery, it would have to be treated before it could be utilized as boiler feed or process water.

D. TREATMENT REQUIRED PRIOR TO USE

From the results of the chemical analysis on the P. V. S. A. effluent, four types of treatment processes will be required before the Refinery could utilize the sewage. These would include chemical coagulation, chlorination, watersoftening and filtration.

The chemical coagulation and water softening processes could be combined into one operation in a flocculator-clarifier, using a cold lime-soda process.

Most of the settleable and suspended solids would be removed in this sludge blanket type clarifier. The cold lime-soda process of hardness treatment would decrease the harness content of the water to a level equal to that of the water now purchased from Bayonne.

Following the chemical coagulation and water softening treatment, the clarified water would be run through sand filters to remove the greater portion of the remaining suspended solids present in the water.

Prior to the chemical coagulation treatment and again after filtration, the water would have to be chlorinated in order to prevent the formation of slimes during treatment and storage.

This first brief analysis indicates that the treated sewage would be a perfectly acceptable and more economic source for boiler feed and perhaps for some of the Refinery's process water.

An approximate cost of constructing the treatment facilities for reclaiming about 1,500,000 gpd (1,000 gpm) of P. V.S.A. sewage to industrial water is estimated at \$250,000.

The total cost (including a return on the capital required) of treated water of this type, exclusive of the charge by the Passaic Valley Sewerage Authority, would be approximately \$100,000 per year for a 1,500,000 gpd supply. This leaves considerable leeway for negotiations with the P.V.S.A.

V. DISPOSAL OF ACID WASTE IN GROUNDWATER

A. DESCRIPTION OF THE ACID WASTE

The acid discharge from the HCl Scrubber Unit in the Chemical Products

Plant is a one percent acid solution. The flow of about 75 gallons per minute

passes through a bed of limestone, which serves as a neutralizing pit, and the

effluent is discharged to the Kill van Kull after dilution with other wastes.

Due to the high cost of neutralizing the acid waste, and the low pH of the effluent when the acid discharge passes over the limestone bed instead of through it, consideration was given to disposing of this waste by injecting it into the ground.

Since it is doubtful that an adequate fresh groundwater supply can be developed at Constable Hook, the discharge of a waste acid, into what is probably
brackish (normally alkaline) groundwater, should not be objectionable. However,
objections were raised by the responsible state authorities when the question
was brought to their attention.

B. ATTITUDE OF RESPONSIBLE STATE AGENCIES

When Mr. M. E. Johnson, the New Jersey State Geologist, was asked his opinion concerning the injection of 75 gpm of acid wastes into the sand and gravel deposits underneath the Bayonne Refinery, Mr. Johnson recommended consultation with the State Public Health Department as the authority having jurisdiction over this question. Nevertheless, Mr. Johnson ventured his own opinion that

the Constable Hook aquifer was probably brackish and not potable. Therefore, the discharge of a small amount of deleterious substance into the aquifer should not be objectionable.

In discussions with Mr. Forman of the New Jersey State Public Health Department, it was brought out that the State policy was to prohibit the disposal of any deleterious materials by pumping into the ground. Even though in this particular case there may be no reasonable objection to such a practice, the State does not want to establish any such precedent. Such a precedent would result, eventually, in deleterious discharges in areas of dubious desirability at first, and totally undesirable areas later, where harm would be obvious.

Although the stand taken by the State was emphatic, it is possible that a compromise could be reached for a carefully worked out project comprising supervised discharges of small quantities of deleterious substances in the Constable Hook area. Problems of injecting the waste into ground water would have to be overcome.

C. RECOMMENDED METHOD OF SUB-SURFACE DISPOSAL OF LIQUID WASTES

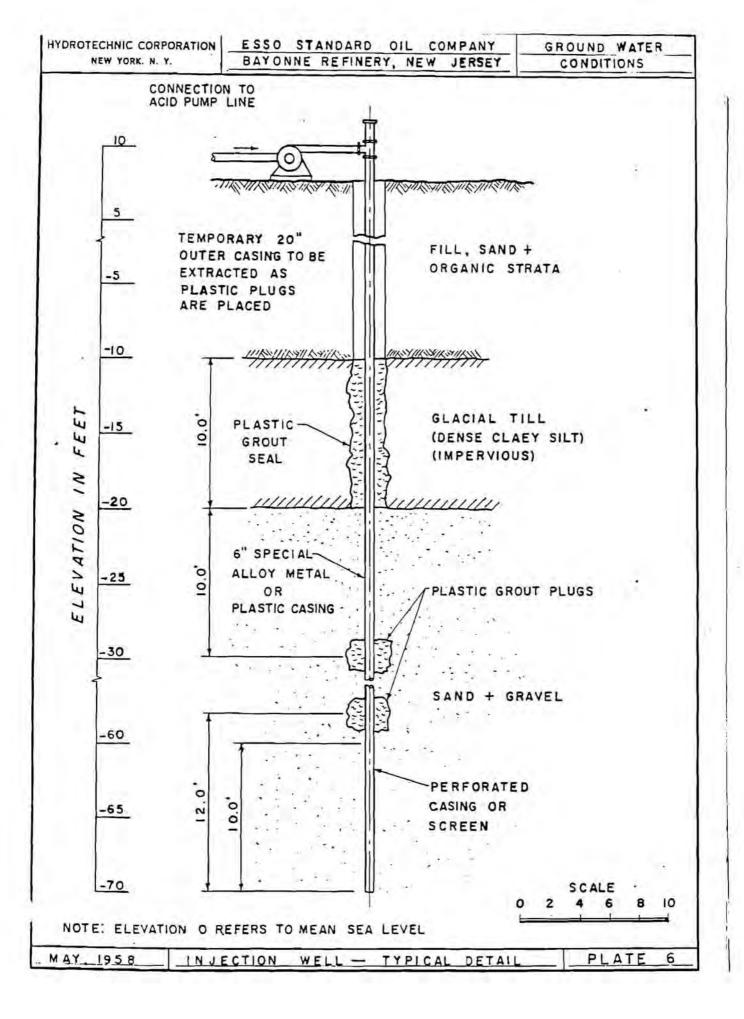
The disposal of 75 gpm of acid waste in the sand and gravel deposits found under the layer of impervious glacial till will require the construction of injection well facilities.

Eccause these wells will probably necessitate periodic cleaning, the construction of two wells placed approximately 1,000 feet apart is recommended.

Only one well would operate at a time.

Plate 6 illustrates and explains the construction features of the well. The subsurface conditions in this area are such that there may be seepage of the acid back to the ground surface. By injecting the acid waste as deep as possible and by providing labyrinth plastic grout collars, the possibility of the upward escape of waste acid will be reduced to a minimum.

If it is decided to proceed with the suggested injection scheme, a test well, using water should be installed before determining the criteria of the more expensive special alloy or plastic wells. The estimated total cost of the two injection wells, including the test well and pumping tests, but exclusive of acid piping and pumps, is about \$25,000.



VI. SUMMARY

A. GROUNDWATER SUPPLY

The data and analysis presented in this report indicate that the development of a suitable fresh groundwater supply of the desired capacity at Constable Hook would be a dubious proposition. Since the only possible aquifer is surrounded by salt water on three sides and a rock ridge on the remaining side, the probability of fresh water recharge from any other source except the area of Constable Hook is precluded. In turn, the dense and highly impervious layer of glacial till overlying the aquifer greatly reduces the amount of local recharge. The water that infiltrates into the upper ground strata does not have to travel horizontally any great distance before mixing with the surrounding salt water. Parts of the aquifer are undoubtedly filled with brackish water even when no pumping is taking place. Although some of the rain water will percolate through the dense glacial till, it is difficult to conceive how large volumes could ever enter the sand and gravel strata underneath.

The accumulated hydrogeologic data indicates that wells on Refinery property cannot provide a sustained fresh water yield of 1,000 - 2,000 gpm. If the Refinery is interested in a possible 150 - 200 gpm source from local ground water, a program of borings, test wells, test pumping and analysis of test data would have to be undertaken. This program would take several months and its overall cost would be \$10,000 - \$20,000.

B. USE OF SEWAGE EFFLUENT

The most appropriate source of fresh water available to the Refinery is the sewage effluent from the Passaic Valley Sewerage Authority that discharges to New York Eay in the vicnity of Robbins Reef Lighthouse. The Refinery will have to carry out very careful negotiations with the Authority to obtain permission to use the P. V.S.A. effluent. Once the Authority decides that the Refinery can use the effluent and can tap the supply at the terminal chamber, the greatest ? part of the problem will have been solved.

Conveying and treating this water is not difficult. If the rate charged by the Authority is not excessive, the relative economy of using this water instead of Eayonne water appears to be excellent.

The Refinery now pays the City of Bayonne some \$300,000 per year for its fresh water supply. The probable total cost for an equivalent amount of reclaimed sewage is \$100,000, including a return on the capital required, but no payments to P. V. S. A.

If the Refinery agrees that this proposition is a realistic solution, a more complete technical study of the problem should be made so that more accurate estimates of cost can be determined. This would be required before entering into any negotiations with the P. V. S. A.

C. DISPOSAL OF ACIDS

Since the Constable Hook area cannot assure an appreciable supply of fresh water, the pumping of the acid waste into the lower strata of sand and gravel is feasible. However, the New Jersey State Public Health Department policy, prohibiting the injection of deleterious materials into the ground, eliminates this project as an immediate solution of the waste disposal problem. Nevertheless, it may be possible to negotiate a mutually acceptable arrangements with the State for controlled discharge of acid wastes into the ground.

Although alternate methods of disposal or treatment of this waste are beyound the scope of this report, more economical methods, yielding better results
than the present, may be devised.

APPENDIX P

SPILLS AND FIRES

APPENDIX P

CONTENTS

	Page
SPILI	LS AND FIRES P-1
	TABLE
P-1.	Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.
	ATTACHMENTS
P-I.	Spills and Fires at Exxon (1966 - 1992) from City of Bayonne Health Department.
P-II.	Fire Incidents from 1955 to 1992 from City of Bayonne Fire Department.

APPENDIX P

SPILLS AND FIRES

This section provides lists of fires, spills, and discharges that may have had an adverse impact on human health or the environment at the Exxon Company Plant, Bayonne, New Jersey. The material presented was compiled in accordance with the November 27, 1991 Administrative Consent Order (ACO), Appendix B, Section IIB, Item 16.

A table of documented spills at the Exxon Company Plant, Bayonne, New Jersey was compiled from the following plant files: General Incident Reports, General Accident Reports, Spill/Mixture/Leak Reports, Spill Incident Reports, shift supervisor spill logs, telephone call logs to the "Emergency Spill Hotline", summary reports (i.e., Annual Oil Spill Reports; spill tables in Spill Prevention Control and Countermeasure Plans; and Leaks, Discharges and AIINS Incident Reports) spill-discharge reports to United States Coast Guard, and spill-discharge reports to the New Jersey Department of Environmental Protection and Energy (NJDEPE). In addition, the June 1992 New Jersey state spill database, obtained from Vista Environmental Information, Inc., was compared to the cited spills and did not yield any additional information. Spills and discharges greater than 100 gallons were chronologically organized into the 13 operational areas in Table P-1. Apparent in Table P-1 is that the Asphalt Plant Area had the most documented spills, greater than 100 gallons. However, the largest documented spill (2,400 gallons) occurred in Solvent Tank Field Area (Tank No. 1033) in 1982. Those ground spills that could be specifically located were plotted on Figure C-1.

Fires and incidences recorded by the City of Bayonne Health Department from 1966 through 1992 and fires and incidences recorded by the City of Bayonne Fire Department from 1955 through 1992 are attached. These lists record the incident number, the date of the incident, and a brief description of the incident. Some of the reportings were duplicated.

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		200 A 20	*	

"A"-HILL TANK FIELD

No documented spills greater than 100 gallons.

LUBE OIL AREA

03/28/72	1,500	Roadway in Plant	Lube Oil Additive	Exxon Company, U.S.A.: Ground Spills
04/21/73	700	Roadway in Plant	Lube Oil	Exxon Company, U.S.A.: Ground Spills
12/23/78	840-1,050	Tank No. 1	Electric Insulating Oil	General Accident Report (12/23/78)
12/24/78	6,300	Tank No. 1	Univolt 60	Letter to New Jersey Department of Environ- mental Protection (02/20/79)
03/24/87	10,000	Tank No. 6	1919 Motor Oil	Spill/Mixture/Leak Report (03/24/87)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		LUBE OIL AREA (Con	tinued)	
08/23/89	100	Tank No. 8	Exxon Formula No. 1367	Spill/Mixture/Leak Report (08/23/89)
01/03/90	100	Pump on Tank No. 139	Slop Oil	Spill/Mixture/Leak Report (01/03/90)
07/30/90	400	Tank No. 581	Wax	Spill/Mixture/Leak Report (07/30/90)
08/14/90	300	Tank No. 94	Lube Oil	Spill/Mixture/Leak Report (08/14/90)
08/28/90	250	Tank No. 545	Slop Oil	Spill/Mixture/Leak Report (08/28/90)
09/10/90	1,114	Truck Loading Rack	Xylene	Spill/Mixture/Leak Report (09/10/90)
11/28/90	100	Truck Loading Rack	Lube Oil	Spill/Mixture/Leak Report (11/28/90)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		LUBE OIL AREA (Co	ntinued)	
01/15/91	2,500	Tank No. 1	Univolt 60	Spill Incident Report (1991)
07/08/91	421	Ground	Turbo Oil	Spill Incident Report (1991)
08/26/91	100	Truck Loading Rack	Wax	Spill Incident Report (1991)
02/14/92	100	Between Tank	Nuto H-46 Nos. 106 and 107	Leaks, Discharges and AIINS Incidents (1992)
02/18/92	600	Tank No. 107	Unknown	Leaks, Discharges and AIINS Incidents (1992)
07/09/92	840	Wax at Tank	Wax Nos. 558 and 586	Leaks, Discharges and AIINS Incidents (1992)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		PIER NO. 1 AR	<u>EA</u>	
09/22/72	2,100	Pier 1 Kill Van Kull Waterway	Wax (MEK Feed)	Oil Spill Report Second Half (1972)
06/28/78	670	Kill Van Kull Waterway	Waste Oil	United States Coast Guard (02/06/79)
10/30/79	1,050-2,100	Kill Van Kull Waterway	Heavy Fuel Oil	Letter to HQ (11/01/79)
11/15/79	> 672	Kill Van Kull Waterway	Emulsion Flux	Letter to HQ (11/26/79)
06/04/89	840	Pier 1 Kill Van Kull Waterway	Fuel Oil	Bayonne Terminal Incidents (1989)
		NO. 2 TANK FIE	<u>rld</u>	
3/01/89	Unknown	Tank No. 1005	No. 2 Fuel Oil	General Incident Report (03/01/89)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		ASPHALT PLANT	AREA	
11/19/70	300	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
11/22/70	300	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
11/25/70	100	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
12/02/70	300	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
12/15/70	150	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
12/23/70	400	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		ASPHALT PLANT AREA	(Continued)	
01/05/71	600	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
01/08/71	300	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
03/19/71	350	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
05/25/71	100	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
05/28/71	200	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
07/15/71	200	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		ASPHALT PLANT AREA	(Continued)	
07/30/71	1,000	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
08/09/71	500	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
08/11/71	200	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
08/13/71	300	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
09/03/71	100	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
09/10/71	100	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		ASPHALT PLANT AREA	A (Continued)	
10/03/71	600	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
01/18/72	100	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
02/09/72	200	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
05/08/72	100	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
12/14/72	1,000	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
01/05/73	300	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		ASPHALT PLANT AREA	(Continued)	
03/20/73	100	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
03/20/73	500	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
04/04/73	1,500	Roadway in Plant	Asphalt	Exxon Company, U.S.A.: Ground Spills
		AVIATION (AV)-GAS T	ANK FIELD	
01/30/88	5,000	Tank No. 1010	Toluene	Spill/Mixture/Leak Report (01/30/88)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		CHEMICAL PLANT	AREA	
01/05/87	500	OCP at Tank No. 923	Exxon Formula No. 82899	Shift Super Spill Log
01/08/87	700	ATFR R/R	Exxon Formula No. 80831	Shift Super Spill Log
01/17/87	100	Tank No. 811	Exxon Formula No. 81348	Shift Super Spill Log
02/12/87	300	"A" Reactor	Exxon Formula No. 80682	Shift Super Spill Log
02/14/87	300	Tank No. 799	Shop Oil	Shift Super Spill Log
02/15/87	300	Tank No. 793	Exxon Formula No. 81744	Shift Super Spill Log
		NO. 3 TANK FIE	<u>LD</u>	
01/26/88	500	Tank No. 920	F540	Spill/Mixture/Leak Report (01/26/88)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		GENERAL TANK	K FIELD	
10/14/90	300	Tank No. 1058	Oil	Spill/Mixture/Leak Report (10/14/90)
10/30/90	1,000	Tank No. 1059	Oily Sludge	General Accident Report (10/30/90)
		SOLVENT TANK	FIELD	
09/22/82	92,400	Tank No. 1033	Isopar L	Exxon Letter to New Jersey Department of Environ- mental Protection (11/16/82)
		LOW SULFUR TAN	NK FIELD	
No document	ed spills greater than 100 ga	llons.		

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
	PIE	ERS AND EAST SIDE TREA	TMENT AREA	
08/12/71	4,200	Pier 6 Upper New York Bay	Gear Oil	Supervisor's Report Incident (8/12/71)
05/30/72	4,200	Pier 6 Upper New York Bay	Asphalt	Oil Spill Report (05/30/72)
08/22/72	21,000	Pier 6 Upper New York Bay	No. 6 Oil	Oil Spill Report Second Half (1972)
09/10/72	21,000	Pier 6 Upper New York Bay	Gas-Oil	Oil Spill Report Second Half (1972)
09/19/73	126	Pier 6 Upper New York Bay	Unknown	Oil Spill Report Second Half (1973)
10/21/73	210	Pier 7 Upper New York Bay	No. 2 Fuel Oil	Oil Spill Report Second Half (1973)
02/11/79	168	Pier 7 Upper New York Bay	No. 2 Fuel Oil	General Accident Report (02/11/79)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
	PIERS A	ND EAST SIDE TREATMEN	T AREA (Continued)	
12/19/85	< 1,134	Pier 7 Upper New York Bay	No. 2 Fuel Oil	Spill Incident Report (1985)
11/23/87	100	Piers 6 and 7	Emulsion New York Bay	Oil Spill Summary (1987)
03/21/88	200	Upper New York Bay	Oil	Spill/Mixture/Leak Report (03/21/88)
05/01/88	200	Upper New York Bay	1941 ATF	Spill/Mixture/Leak Report (05/01/88)
10/24/89	100	Pier 7 Upper New York Bay	Diesel Fuel	Bayonne Terminal Incidents (1989)
11/03/89	100	Pier 7 Upper New York Bay	Diesel	Bayonne Terminal Incidents (1989)
05/22/91	350	Upper New York Bay	Xylene	Spill Incident Report (1991)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
	PIERS A	ND EAST SIDE TREATME	NT AREA (Continued)	
06/18/91	16,000	Upper New York Bay	No. 2 Heating	Oil Spill Incident Report (1991)
08/01/91	100	Line Near New Tank No. 1097	Blend Oil	Spill Incident Report (1991)
		DOMESTIC TRADE	AREA	
No document	ed spills greater than 100 ga	llons.		
		MISCELLANEOUS A	REAS	
11/23/76	147	Kill Van Kull Waterway or Upper New York Ba		Oil Spill Data (1976)
07/13/78	168	Kill Van Kull Waterway or Upper New York Ba		Oil Spill Data (1978)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
		MISCELLANEOUS AREAS	Continued)	
10/10/78	630	Kill Van Kull Waterway or Upper New York Bay		Oil Spill Data (1978)
12/25/78	210	Kill Van Kull Waterway or Upper New York Bay		Oil Spill Data (1978)
03/28/88	200	Ground	EXXMARX 70-5720	Bayonne Plant 1988 Reportable Spills
01/18/89	6,000	Ground	Motor Oil Dispersant	Spill/Mixture/Leak Report (01/18/89)

Table P-1. Documented Spills at the Exxon Company Plant, Bayonne, New Jersey.

Date	Reported Spill Volume (Gallons)	Approximate Location	Material Spilled	Spill Documentation
	3	MISCELLANEOUS ARE	AS (Continued)	
01/21/92	2,500	Tank Transfer	Black Oil	Leaks, Discharges and AIINS Incidents (1992)
10/06/92	100	Tank Number	Unknown Product	Leaks, Discharges and AIINS Incidents (1992)
ATF HQ OCP	Automatic transmi Headquarters. Olefin Co-Polymer	436 Feb 5 v 7 v 7 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2		

n.I IN

ATTACHMENT P-I

SPILLS AND FIRES AT EXXON (1966 - 1992) FROM THE CITY OF BAYONNE HEALTH DEPARTMENT

SPILLS AND FIRES AT EXXON

INCIDENT NUMBER	DATE	TYPE OF INCIDENT
1619 -	11-28-66	FIRE PUT OUT BY PERSONNEL
1380 -	11-7-67	CHEMICAL LEAK USED JET FOAM
1483 =	11-30-67	FLASH FIRE OUT ON ARRIVAL
355 -	11-18-68	SLOP OIL
613 =	4-23-68	MAIN GATE GAS LEAK
1003 -	7-19-68	TANK
90 -	1-27-70	RUBBISH FIRE
978 -	6-22-70	SECOND ALARM
1009 -	6-28-70	STORAGE TANK
2493 -	10-17-73	OIL SPILL
3079 -	12-12-73	SURFACE FIRE
840 -	3-29-76	FIRE IN PUMP
1561 -	6-11-76	OIL FILLING BUILDING
1710 -	6-23-76	
3033 -		PAINT ON TANK AFIRE
567 -	11-14-76	CHEMICAL REACTION
	3-18-77	ASPHALT TANK
1039 -	5-6-77	TANK FIRE
33 -	1-5-78	NAPTHA SPILL
327 -	2-14-80	LEAK IN JET FUEL LINE
974 -	5-13-82	STRUCTURE FIRE
1334 -	7-14-84	FIRE IN REACTOR
2555 -	12-18-83	TANK FIELD 4 ALARM
102 -	1-17-84	ASPHALT TANK AFIRE
2138 -	9-4-85	INSULATOR FIRE
3024 -	12-19-85	FIRE INSULATION
1935 -	8-14-86	n n
69 -	1-25-87	
193 -	1-24-88	
354 -	2-16-88	FUEL OIL BURNING
504 -	3-4-88	FUEL OIL SPILL
1723 -	7-28-88	FUEL OIL SPILL
2329 -	10-6-88	DIESEL SPILL
2473 -	10-22-88	OIL RESIDUE FIRE
2537 -	10-30-88	OIL SPILL
2578 -	11-4-88	CHEMICAL LEAK
3069 -	12-28-88	FUEL OIL SPILL
0045 -	1-5-89	STRUCTURE FIRE
0141 -	1-18-89	OIL FIRE
0524 -	3-3-89	FUEL OIL SPILL
1079 -	5-18-89	OIL SPILL
4072 -	12-19-89	OIL SPILL
0113 -		
0227 -	1-15-90	TANK LEAKING
	2-1-90	OIL ADDITIVE SPILL
2864 -	8-25-89	INSULATION FIRE
3370 -	10-17-89	DIESEL OIL SPILL
3542 -	10-24-89	FUEL OIL SPILL
3545 -	10-24-89	LUBE OIL SPILL
4038 -	12-15-89	OIL SPILL
1645 -	7-29-87	INSULATION FIRE
2888 -	12-22-87	FIRE IN TANK
113 -	1-15-88	INSULATION FIRE
1921 -	8-19-88	
250 -	9-25-88	DIESEL SPILL
2294 -	10-1-88	AXFLUX SPILL
1019 -	5-12-89	OIL SPILL
079 -	5-18-89	
0083	1-18-68	Elec. Pump Failure Cil on g

EXXON CONTINUED

INCIDENT NUMBER	DATE	TYPE OF INCIDENT
3643 -	11-7-89	OIL SPILL
0240 -	2-2-90	BUNKER OIL LEAK
0379 -	2-22-90	OIL SPILL
0386 -	2-23-90	NAPTHA SPILL
0425 -	2-28-90	OIL SPILL
0426 -	2-28-90	" "
0449 -	3-2-90	HAZMAT INCIDENT
0662 -	4-2-90	HAZMAT LUBE SPILL
0693 -	4-6-90	FUEL OIL
0733 -	4-10-90	SPILL
0791 -		
	4-17-90	OIL SPILL
2333 -	10-27-90	n n
2357 -	10-30-90	
2361 -	10-31-90	
2527 -	11-20-90	HAZMAT INCIDENT
2590 -	11-28-90	LUBE OIL SPILL
2744 -	12-18-90	OIL SPILL
2835 -	12-28-90	INSULATION FIRE
0099 -	1-15-91	SPILL
0114 -	1-16-91	OIL SPILL
1353 -	6-28-90	SOLVENT SPILL
1793 -	8-14-90	OIL SPILL
1812 -	8-17-90	LUBE OIL SPILL
1911 -	8-28-90	CHEMICAL SPILL
1913 -	8-28-90	WATER AND OIL SPILL
2021 -	9-12-90	ELECTRICAL FIRE
2066 -	9-18-90	DIESEL SPILL
2246 -	10-15-90	OIL AND WATER SPILL
0175 -	1-22-91	SPILL
0282 -	2-8-91	HAZMAT OIL SPILL
0358 =	2-20-91	OIL ADDITIVE SPILL
535 -	3-20-91	OIL SPILL
1489 -	7-22-91	SPILL
1562 -	8-1-91	M
1670 -	8-15-91	
1731 -	8-26-91	
2458 -	12-5-91	
2498 -	12-9-91	- 11
2519 -	12-13-91	
0187	1-21-92	H.
0200	1-23-92	Barge Fire
0211	1-24-92	SPILL
0211	1-64-74	NA AMA

3.1

ATTACHMENT P-II

FIRE INCIDENTS FROM 1955 TO 1992 FROM THE CITY OF BAYONNE FIRE DEPARTMENT Hearth vil Men gate

174 - 5-26-60 - Stool by on the colort

15/9-9/20 Second alasm (See Report)

1702-10/11/10 Compressed gas affinder

7:0-1/15/7/ Oct Keap (Truck)

Standard Oil Eint as & - Plant 13

252-1955.

14-141 - 1958

-74-1959

60-80-0-1962 - 20 Sine.

80-80-0-1962 - tonk-5161

1418 - 1962 - Standard Dis. unit

-1461 - 1962 - Word Staging on tank # 961 + 960

1247 - 1963 - oid Lute Erum Hdg.

ESSO-HUMBLE OIL EXXON

EAST 22ND ST.

16181/2-NOTIFIED "128 /66-PUT OUT BY PERSONNEL

1380-11/167-HEXANE /EAR USED JET FEAM

1483-11/30/67-CHEM. PARDUCT FLASH FIRE OOA

183-11/8/68-FIEC PUMP FAILURE. GATE 3 ON GROWND

1207-8/30/69. STOOD BY FIRE ALERT

1208-8/30/69. ACCUSENT ENJAY SUBSIDIARY OF PUMBLE

213. 2/15/69 S-C CC DY

90-1-27-70 CRH THOP, RUTBRAGE FIRE

978-6/24/70 Second alaren
1009-6/28/70 Second alaren
1009-6/28/70 Second alaren-

Humble Esso Dil Refinery Rest 22nd St.

161816 - NOTIFIED" 28 60 - PUT OUT BY PERSONNEL

1380 - "12/67. CHEM LEAR USED JET X FORM

1483. "130/67. FLASHFIRE CHEM PRODUCTS O.O.A.

355-1968 - SLOP OIL - SOUTH OF UNION TR. CO.

613-4/23/68 MAIN COT - GOS LODIC (NATURAL)

1003-7/19/65 TINF

15-1/4/20 Smake scare

55-1/9/12- Minin fire (Sate 3) 682-4/6/12 June about 2007. 6/13/12 June about 2377 11/11/12 2 milliam (ME.K. Olt) 266-12/11/12 Burnere Touch

406-1964

730-1964-Ship will'it Coul of Domestic Sales.

1505-1964-SLOP OIL & CIL SLUDGE.

83-1965-WAX PLANT.

1537-1865. Domestic Joles TANK TRUCK
1190-1966-Improp FUEL MIX-CAUSED Smake
REC'D FROM STO OIL Co. A. MR. O'CONNOT
FIRE IN WAY PRESSING PUT OUT BY PERCONNOL
(11/28/66) FILE & 1618/12

1756-7/26/70-Smake Scarce

EXXUM 501 3-19-17 auproit him. 571 3-17-17 - A Good - Eng 5-6-TANK PIRE. 1095 RIBONA 1921 1974 25.56 8-16-17 SCERE. 3 کی 1-5-78 MERTHA 2505 10/30/78 SPILL NO CAUSE 283 2-8-79 BOMB SCARE 1630 7-30-79 TRAINMIT TANK TRUCK

EXXON 1089 4-21-75 8-1-75 1827 lemered men from tank 2923 12-17-75 3-29-76 840 6-9-76 1531 6-11-76 1561 1710 6-23.76 Can't contact on fire 1793 7-1-76 Homest much-te 3033 11-14-76 Chemical recetion

1358 6-9-73 Zerner aren pole.

2073 8-36-73 Zerner aren pole.

2493 10-17-73 Did not operate.

3079 12-12-73 Juntary arent.

1095 5/8/74 Dimetalin and ding.

2349 9-18-74 Breakthap

2359 9-20-74 Breakthap

Picco California.

1/22 15000-Querterior Vice neulation 3024 12-19-85 3037 in Tondal Clarin 202 1-23-86 24-86 8-1276 itize Tore 1-25-87 Fore EXXON 12-6-52 2415 TIMIN DERNILMENT 334 2-22-83 RAGS BURNING ON TUG 16-26-83 Bomb Scare 2115 Faul Field - Helam Frie 12-18-83 2555 Foliveto Producto deprolet Tank 7 -102 =1.7 - 57 Electrical Short 106: 1-18-74 343 Trailer Fire 2-27-84 433 Tug Fix Gut #2 4-10-84 Bond Sear

のできることを表現している。これでは、10mmのでは、10mmのでは、10mmのでは、10mmのでは、10mmのでは、10mmのできる。10mmのできる。10mmのできる。10mmのできる。10mmのできる。10mmので

EXXON 10-15-73 FIRE IN INSCLITION AREING 2192 FEDORET OF BELLE FIRE 2-3-8: 224-BOMB STARY 9-13-50 524 LEAK IN VET FUEL LINE 2.14.80 3-27 FARLTY GENERATOR ON SARGE 5-30-80 1007 THIKE IN AREA 6-13-80 1103 SMORE FRET PROFUSING FURNALE 7-21-50 1420 FIRST IN BOILE FORT - LEXEN PARCIE 5-15-5 1:31 FIELD IN ENGINE POSTS EAPIRE STATE 6 11- 51 1116 BOMB SCERE 10.13.51 1566

CHERRY 1-24-88 Thankation Fix Arywill ma 1-28 55 2-1633 504 3-4-88 Fuil Cul Spill 1382 6-29-80 nricessau Illan 1723 7-22-80 1901 8-16-88 2329 10-6-88 Durel Spill 2473 10-20 88 Al Residue fure 2537 10-30-88 Effin 1072 6-11-84 Enoly Condition 7-14-84 1334 Fire in Reaction 7-26-84 1410 Truch 1553 8-16-81 Out on amount 18.5.0 1895 6ats #2 Train Descent 1946 10.5-84 Trum Deraudret Gate # 3 12-19-84 Siren activaled 3491 1-1-85 Bomb Scare Expon Fire in Insulation 415 3-1-82 Smoke Scare 3-1-82 419. Grass Fire 4-10-82 707 Gross fire 4-25-82 855 Structure fire (insulation) 5-13-82 974 Vaporo in air 7-15-82 1423 File in yard 8-17-82 1647 Insulation fire (Pint 6) 8-24-82 1703 9-12-82 BOMB SCAPE

**** 1645 1.88 1921 2250 (Pur 2294 9-25-88 これは なるないでした on Substation 6-8-88 おおかかからないましていいままなます。 でんかいているとうしゃ ししらませんちょうちょう しゅうかんしん またってき かんかんかんかん あってんだい

TOTAL STATE

,一个人就是这个人,也是一个人,我们就是一个人的人,也是一个人的人,也是一个人的人,也是一个人的人,也是一个人的人,也是一个人的人,也是一个人的人,也是一个人的

F--

0379 Tarent I 33.27 3345 3370 3542 354**5** 4078 ラガルス・トガン あるかい はまかかとう

101 A 101

TO A CANADA STATE OF THE STATE

7

0425 04~6 04-9 putici 166V c693 4-10-90 67.26 4-10-90 0737_0791 5-23-90 Cde Fine 1073 4072 0039 17-19-89 Helicopter Take off a landa 0178 Lacque Odor 0193 0216 1-30-90 Bonk Scare 0227 Oil additive Spill Out on arrial 2-1-90 0228 2-1-90 Exxon

A*1

1

	Expore Errit
6.3 1/	2 13.90 Unnecessing alexa
1061	5-18-92 Oil Spill
1235	6-14.92 bil Sheen on water
1497	7-21-12 all Sien on bate.
1761 4	6. r6-9r Spill
(804	9-1-82 all Still
1870	9-10-92 Spill
1879	9-11-92 Sull
	9-23-92 Standby Extrowsler The
1993	9-23-92 Standby Estiquisher That 9-26-92 Spiel
[" · · ·	
	Exxon
6175	
0282	2-8-91 Hermet Cil Si
0358	
535	3-20-91 Oil Eddition Sile
458	
404	, mentaling
975	
1398	- //
1489	7-11-91 Sheen on water
* **	0/25
4) =	7. 10
	Effor
1353	6/28/90 Solvet Spill
1793	8-14-90 Oil Spll fule Clit
ikir	8-17-90 Jule lil Sull
1911	8-28-90 Chemical Spill
1913	6-28-90 hater Oil Spill
20V1	4-12-90 Electrical Fire
1066	9-18-90 Dist Spill
_ v246	10-15-90 Pil+ water Still
_ x48	10-15-90 Injured man
	11
	3.0

APPENDIX A

CONTENTS

Page
INTRODUCTION A-1
OWNER/OPERATOR HISTORY
TYPE OF OPERATION A-2
DESCRIPTION OF OPERATIONAL AREAS A-3
"A" Hill Tank Field A-4
Lube Oil Area
Pier No. 1 Area
No. 2 Tank Field
Asphalt Plant Area
AV-Gas Tank Field A-6
Exxon Chemicals Plant Area
No. 3 Tank Field
General Tank Field
Solvent Tank Field A-8
Lower Sulfur Tank Field
Piers and East Side Treatment Plant Area A-9
Domestic Trade Area
REFERENCES
<u>FIGURES</u>
Site Location Map.

- A-1.
- A-2. Operational Areas, Site Boundaries and Neighboring Industries.

ATTACHMENTS

A-I. Drawing of Bayonne Plant, Exxon Company, U.S.A., PM-30 Depts/Facilities Designation by Exxon Company, U.S.A., June 21, 1983.

APPENDIX A

OPERATIONAL HISTORY

INTRODUCTION

The purpose of this section is to fulfill the requirement of the November 27, 1991 Administrative Consent Order (ACO), Appendix B, Section IIB, Item 1. Background information is provided about owner/operator history, type of operation conducted, dates of ownership/operation, and current address of the owner/operator of the Exxon Company Plant, Bayonne, New Jersey. The Exxon Company Bayonne Plant is referred to as the Plant and/or the Site.

The Site, located at 250 East 22nd Street, Bayonne, New Jersey (Figure A-1) is owned by Exxon Corporation of 800 Bell Street, Houston, Texas and operated by Exxon Company, U.S.A. and Exxon Chemical Americas (Exxon). The Site covers approximately 288 acres (250 land and 38 riparian) of the Constable Hook area of Bayonne, New Jersey (Exxon Company, U.S.A. 1989; Dan Raviv Associates, Inc. 1992). The Site is bordered to the north, west, and much of the south by various industrial facilities, as indicated on Figure A-2. The Site is also bordered by three waterways: Platty Kill Creek to the south west, Kill Van Kull Waterway to the south, and Upper New York Bay to the east.

OWNER/OPERATOR HISTORY

Exxon (under the name of its predecessors) purchased the Plant in 1877 from Prentice Oil, a kerosene refining company. Due to the extensive period (115 years) in which Exxon, under the names of Standard Oil Company of New Jersey, ESSO Standard Oil Company, and Humble Oil & Refining Company, owned and operated the Bayonne Plant, no effort has been made to document other previous owners or operators at the Site.

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Consultants in hydrogeology and soils, site investigation/remediation, and ISRA compliance

Dan D. Raviv, Ph.D Kenneth B. Siet John J. Trela, Ph.D

VOLUME I OF II TEXT, FIGURES AND TABLES

NON-AQUEOUS PHASE LIQUID (NAPL)
INTERIM REMEDIAL MEASURES INVESTIGATION
PLATTY KILL CANAL AREA
EXXON BAYONNE PLANT
BAYONNE, NEW JERSEY

DRAI JOB NO. 93C1295

prepared for:

Exxon Company, U.S.A.
Site Remediation Team
Chemicals Administration Building
Linden, New Jersey 07036

Attention: Mr. Christopher F. Zwingle, P.E.

prepared by:

Dan Raviv Associates, Inc. 57 East Willow Street Millburn, New Jersey 07041

December 14, 1994

TABLE OF CONTENTS

Section No.	Title	Page No.
1.0	INTRODUCTION	1
	1.1 Scope of Investigation	1
	1.2 Organization of Report	1
2.0	BACKGROUND	2
	2.1 Historical Operations	2
	2.2 Pre-Existing Ground Water Monitorin	ng Network 2
	2.3 Previous Investigations	2
	2.4 Wooden Bulkhead	3
3.0	GEOLOGY AND HYDROGEOLOGY	4
	3.1 Fill	4
	3.2 Silt and Clay Layer	4
	3.3 Sand and Gravel Layer	5
	3.4 Lower Silt and Clay Layers	5
	3.5 Canal Sediments and Underlying Geol	logy
	Materials	5
4.0	FIELD INVESTIGATION	6
	4.1 Soil Borings	6
	4.2 Monitoring Well Installations	7
	4.3 Soil Sampling	7
	4.3.1 Analytical Results	8
	4.4 Ground Water and NAPL Sampling	8
	4.4.1 NAPL Analytical Results	8
	4.5 Tidal Investigation	9
	4.5.1 Field Procedures	9
	4.5.2 Results	9
	4.6 NAPL Occurrence in Wells	11
	4.6.1 NAPL Recharge Tests - Wells	PKMW12 and
	PKMW11	11
	4.6.2 Bail Down Test - Well EB19	12
	4.7 Aquifer Tests - PKMW11 and PKMW12	12
	4.7.1 Field Procedures	12
	4.7.2 Results	12
	4.8 NAPL Recovery Tests - Well PKMWll	13
5.0	CONCLUSIONS	15
	5.1 The Unconfined Shallow Ground Water	
	5.2 The Clay and Silt Layer	15
	5.3 The Confined Deep Ground Water Zon	e 16
	5.3.1 Occurrence of NAPL	16
	5.3.2 Tidal Influence	16
	5.3.3 Pumping Tests	17

TABLE OF CONTENTS (Cont'd)

Section No.	Title	Page No.
	5.4 Unconfined/Confined Zone Relationship	17
	5.5 Unconfined Zone/Canal Relationship	18
	5.6 Confined Zone/Canal Relationship	18
	5.7 Potential NAPL Migration	18
6.0	RECOMMENDATIONS	20
7.0	RELATED REFERENCES	22
	LIST OF FIGURES	
		Phase of
Figure No.	Title	Investigation
1	Site Location	1
2	Buildings and Tanks Associated with Former (Circa 1930-1960) and Existing Operations	1 & 11
3	Location of Soil Borings and Monitoring Wells	I & II
4	Hydrogeologic Cross-Sections	II
5	Isopach Map of the Silt and Clay Layer Thickness	I & II
6	Total Petroleum Hydrocarbons and	-
	GC-Fingerprinting in Soil	I
7	Volatile Organic Compounds in NAPL	I
8	Semi-Volatile Organic Compounds in NAPL	I
9	Total Petroleum Hydrocarbons (PHCs) and GC-Fingerprinting in NAPL	1
10	Discontinuous Layers of Petroleum Impacted Soil in Confined Zone and Measurable NAPL in Wells	11

LIST OF FIGURES (Cont'd)

Figure No.	Title	Phase of Investigation
11	Tidal Investigation Hydrographs for Unconfined Wells - March 7 to 9, 1994 - Phase I	1
12	Hydrographs of Confined Zone Wells and Tidal Gauging Stations - Tidal Study and Pumping Tests - September 13 through 22, 1994 - Phase II	II
13.	Hydrographs of Paired Wells and Tidal Gauging Station - Tidal Study and Pumping Tests - September 13 through 21, 1994 - Phase II	II
14	Unconfined Zone Ground Water Elevation Contours - March 8, 1994 - Low and High Tides	II
15	Confined Zone Ground Water Elevation Contours - September 13, 1994 - Low and High Tides	11
16	Specific Conductivity and Temperature Distribution in Unconfined and Confined Zones - September 13, 1994	11
17	NAPL Thickness vs. Elapse Time - Well PKMW12	1
18	Apparent NAPL Thicknesses in Unconfined and Confined Ground Water Zones - September 1994	II
19	Hydrogeologic Cross-Sections During Pumping Tests of PKMWll and PKMWl2	11

LIST OF FIGURES (Cont'd)

Figure No.	Title	Phase of Investigation
20	Potentiometric Surface Elevation After 620 Minutes of Pumping PKMW12 at 86 gpm	. II
21	Potentiometric Surface Elevation After 1400 Minutes of Pumping PKMW11 at 81 gpm	ıı
	LIST OF TABLES	Phase of
Table No.	Title	Investigation
I	Well Construction Details	1 & 11
11	Summary of Total Petroleum Hydrocarbons and GC-Fingerprinting in Soil	ī
111	Summary of Soil Core Oil and Water Saturation	11
IV	Summary of Volatile Organic Compounds in NAPL	I
V	Summary of Semi-Volatile Compounds in NAPL	I
VI	Summary of Total Petroleum Hydrocarbons, GC-Fingerprinting, Specific Gravity and Viscosity in NAPL	I & II
VII	Summary of Tidal Investigation Results	I & II
VIII	Summary of Pumping Test Analyses	II
IX	Summary of Volatile Organic Compounds in Pumping Test Discharges (PKMW11 and PKMW12)	II
x	Summary of Sodium, Chloride, TDS and Conductivity of Pumping Test Discharge (PKMW11 and PKMW12)	II
XI	Summary of Dual Pump Test (NAPL and Water) - Well PKMW11	II

LIST OF APPENDICES

Appendix No.	Title
	VOLUME II OF II
A	Monitoring Well and Soil Boring Logs
В	Laboratory Data Sheets
C	Ground Water/NAPL Levels, Pump Test Hydrographs and Calculations

INTERIM REMEDIAL MEASURES INVESTIGATION PLATTY KILL CANAL AREA EXXON BAYONNE PLANT BAYONNE, NEW JERSEY

DRAI JOB NO. 93C1295

1.0 INTRODUCTION

1.1 Scope of Investigation

On behalf of Exxon Company, U.S.A., Dan Raviv Associates, Inc. (DRAI) has completed an interim remedial measures (IRM) investigation at the Platty Kill Canal (Canal) area of the Exxon Bayonne facility in Bayonne, New Jersey (Figure 1). The investigation was conducted to evaluate the extent and offsite migration potential of non-aqueous phase liquid (NAPL). NAPL has historically been detected within the shallow, unconfined ground water zone at well EB19. During the field investigation, NAPL was also discovered in a deeper confined ground water zone. The Canal IRM investigation was conducted as part of the Exxon Administrative Consent Order (ACO) of November 27, 1991.

The field investigation was completed in two phases (Phase I and Phase II), between November 1993 and November 1994. The field work included the following activities: (1) installation of 15 new monitoring wells - nine within the shallow unconfined zone and six within the deep confined zone; (2) completion of 15 soil borings - eight borings on land and seven over water within the Canal; (3) tidal investigations; (4) a soil, ground water, sediment and NAPL sampling and analysis program; (5) a baildown test on well EB19; (6) aquifer pumping tests of the confined zone; (7) product recovery tests; (8) sealing of two pre-existing wells (EB18 and EB20) and rehabilitation of one pre-existing well (EB19); (9) multiple rounds of ground water/NAPL level measurements in wells.

Based on the results of this IRM investigation, design criteria for a NAPL recovery system and monitoring program have been developed.

1.2 Organization of Report

The IRM investigation was carried out in two phases. Phase I during the end of 1993 and the beginning of 1994 and Phase II during the summer and fall of 1994. Phase II was scoped based on the findings of Phase I and concentrated primarily on the investigation of the deep confined water bearing zone, including the delineation and occurrence of NAPL, the tidal affect, the determination of hydraulic parameters, and an evaluation of the mobility of the NAPL.

When appropriate, the presentation of data is divided between the two phases. However, the majority of the presentation does not consider the phase during which data were collected, as it is irrelevant.

2.0 BACKGROUND

The historical information of the Platty Kill IRM area is based on inspection of aerial photographs, Exxon plot plans, discussions with current or retired Exxon employees and review of deed maps.

2.1 <u>Historical Operations</u>

The land currently encompassed by the Canal investigation area was purchased by Exxon through several acquisitions between the late 1890s and late 1930s. Between the early 1900s and 1950s various wax manufacturing facilities had been constructed, operated and dismantled in an area primarily along the eastern portion of the Canal (Figure 2). Also during this period and as recently as late 1967, limited equipment and buildings associated with lube oil manufacturing (e.g., the pipe still unit [F] and a phenol plant for refining lube oils) were still used.

From 1950 through the late 1960s the methyl ethyl ketone (MEK) plant north of the Canal was operated (Figure 2). Wax was purified in this facility, and oils were removed from the wax with large rotary filters. Wax was removed from the filters with MEK; toluene was also used during the wax processing. According to a former Exxon MEK plant manager, no chlorinated solvents or methyl isobutyl ketone (MIBK) were used in the post-1950s wax manufacturing processing at the MEK plant (Kadlubowski, 1994). At other locations within the Bayonne facility, wax from the MEK plant was molded into 30 pound cakes for further processing into canning wax, wax paper and other wax products.

By 1974, all the wax and lube operational units in the northern portion of the site, including the MEK plant, were dismantled; only five above ground storage tanks (AGSTs) remained, which had stored various wax and petroleum oil products. These AGSTs were subsequently dismantled. East of the Canal, AGSTs are currently used to store various lube and petroleum products. Since the 1950s the eastern portion of the site has had various configurations of AGSTs and equipment which are associated with lube and wax operations.

2.2 Pre-Existing Ground Water Monitoring Network

A total of six old historical wells were located during the Phase I investigation. These include five monitoring wells (EB15, EB18, EB19, EB20 and EB90) and one inactive recovery well (EBR22) (Figure 3 and Table I). All of the wells are screened within the unconfined unit. The maximum depth of these wells ranges from 6 to 14 feet. NAPL has only been detected at well EB19; a maximum apparent NAPL thickness of 3.0 feet has been measured within the well. Wells EB18 and EB20 were sealed in accordance with the New Jersey Department of Environmental Protection (NJDEP) protocol; well closure reports are provided in Appendix A. Wells EB15, EB19 and EBR22 were retained to provide ground water or NAPL level information during the current investigation.

2.3 <u>Previous Investigations</u>

On June 25, 1993, DRAI collected NAPL samples from well EB19, a sediment sample from the Canal and a NAPL sample from along the Canal. The purpose of the sampling was to assess the NAPL's composition. All samples were analyzed for base/neutral and acid extractibles (BNAs), target analyte list (TAL) metals and gas chromatography (GC) fingerprinting. The analytical results are consistent with petroleum type hydrocarbons, however the GC-fingerprint results could not be matched with any standards.

2.4 Wooden Bulkhead

Two wooden bulkheads exist along Exxon's 1200 feet of shoreline north and east of the Canal (Figure 3). A more recent (circa 1980) wooden bulkhead was built in front of the old (pre-1953) wooden bulkhead; the new bulkhead is located along nearly 900 feet of the eastern shoreline and a portion of the northern shoreline. The old wooden bulkhead extends an additional 300 feet to the north from the newer bulkhead. The new wooden bulkhead is constructed of interlocking timber pilings, approximately 26 to 28 feet long, (Figure 4).

The old wooden bulkhead, which currently extends along the northern edge of the Canal beyond the more recent bulkhead, is constructed of tongue-and-groove wooden sheet piling. An Esso drawing indicates that this bulkhead probably existed prior to 1953. When constructed, this old bulkhead may have been approximately 1,000 to 1,500 feet long. Along the eastern shoreline, portions of this old bulkhead are visible behind the newer bulkhead. These pilings are approximately 21 to 26 feet long (Figure 4).

3.0 GEOLOGY AND HYDROGEOLOGY

The following description of the unconsolidated materials beneath the Canal study area is based on observations noted during soil boring completions and monitoring well installations supervised by DRAI between November 1993 and August 1994. Hydrogeologic cross-sections and orientation are provided in Figure 4.

3.1 Fill

The fill consists of black silty sand and cinders with varying amounts of gravel and construction debris (concrete, wood, brick and glass). The fill layer ranges in thickness from 6 to 20 feet, but is typically 10 feet thick (Figure 4). Elevated photoionization detector (PID) readings, petroleum-impacted fill and limited areas of NAPL (NAPL was encountered in four of the shallow wells were noted within this layer.

The unconfined ground water zone is present within the relatively permeable fill layer. The water table within the fill beneath the northern part of the site (north of well PKMW4) is generally encountered between 2 and 5 feet below ground surface (bgs). The saturated thicknesses is approximately 5 to 7 feet. The depth to the water table in the southern portion of the Canal study area is generally 8 feet bgs with a maximum saturated thickness of 11 feet.

3.2 Silt and Clay Layer

A two to eight foot thick silt and clay layer exists beneath the fill layer and consists of a gray clayey silt to silty clay with varying amounts of plant matter (stalks and roots) as presented in Figure 4. North of the Canal, the silt and clay layer is horizontally extensive and is typically 5 to 8 feet thick (Figure 5). Typically, the bottom of this stratum is at elevation -5 to -10 mean sea level (msl). Beneath the Canal, the silt and clay layer is absent; it was excavated during the construction of the Canal (Figure 4). In general the silt and clay layer did not appear to contain petroleum stained or impacted materials with the exception of two thin zones located at the top and bottom boundaries of the layer. These two thin zones appear to result from contact with the contaminated overlying fill and underlying sand and gravel layers.

The silt and clay layer is relatively impermeable and forms a horizontally extensive confining layer which limits vertical ground water flow and potential NAPL migration between the fill and the underlying soils.

3.3 Sand and Gravel Layer

A five to 13 foot thick reddish brown to gray, silty sand and gravel layer is present beneath the silt and clay layer. Beneath the Canal, this stratum was partially excavated during Canal construction. Coarse-grained sand and gravel units are interbedded with silty or sandy units within this layer. The sand and gravel is angular to rounded and contains varying amounts of silt and clay. Overall, the silt content within this layer increases with depth. Discontinuous layers of petroleum-impacted soils with elevated PID readings, sheens and occasional NAPL were typically observed within the upper three foot portion of the sand and gravel layer.

The sand and gravel layer is a highly permeable confined ground water zone located between two relatively impermeable zones (the upper confining silt and clay layer and the underlying lower silt and clay layers). Ground water

elevations in wells screened within the sand and gravel layer are generally eight feet above the bottom of the silt and clay confining layer.

- 3.4 Lower Silt and Clay Layers
 The sand and gravel layer is underlain by a 1 to 2 foot thick reddish brown silt layer which grades into a reddish brown clay layer which is at least three feet thick (Figure 4). Weathered rock fragments are occasionally present within these layers. Both layers appear to be relatively impermeable.
- 3.5 <u>Canal Sediments and Underlying Geology Materials</u>
 Apparently, during construction of the Canal, the upper confining silt and clay layer, as well as a portion of the sand and gravel layer was excavated. The original dredge line of the Canal is thought to be at approximately elevation -20 msl. Ten to 15 feet of black sludge-like sediments has since accumulated at the bottom of the Canal. The sludge like material consists of fine grained petroleum laden sediments and appears to have a relatively high water content. These sediments are underlain by the remaining, unexcavated portion of the sand and gravel layer. Similar to other areas of the site, the lower silt and clay underlies the remaining sand and gravel layer.

4.0 FIELD INVESTIGATION

The IRM field investigations at the site were conducted in two phases: Phase I of the field investigation was conducted between November 1993 and April 1994 and included: installation of 12 monitoring wells, nine (PKMW1 through PKMW9) within the unconfined zone and three (PKMW10 through PKMW12) within the confined zone; six soil borings (borings Bl through B6); a tidal investigation; sealing of two pre-existing wells (EB18 and EB20) and rehabilitation of one pre-existing well (EB19); and, several rounds of ground water/NAPL level measurements in wells.

Phase II was completed between August and November 1994 and included: installation of three confined zone wells (wells PKMWl3 through PKMWl5); two shallow soil borings (borings B7 and B8); seven over water borings (borings B9 through B15) within and beneath the sediments of the Canal; a soil, sediment and NAPL sampling and analyses program; a comprehensive tidal investigation; aquifer tests using wells PKMWll and PKMWl2; a baildown test on well EB19; and, a NAPL recovery test on well PKMWll using a dual pumping system (NAPL and water).

4.1 Soil Borings

A total of 15 soil boring were completed; eight land borings and seven borings within the Platty Kill Canal (Figure 3). Borings were completed by Environmental Drilling Inc. (EDI) of West Creek, New Jersey, a licensed New Jersey driller. Continuous split-spoon sampling was performed at all locations where the stratigraphy had not previously been documented. Soil boring logs are provided in Appendix A.

The eight land borings (Bl through B8) were completed in order to provide vertical and horizontal delineation of NAPL (Figure 3). Boring depths varied from 11 to 28 feet bgs. All borings were installed using hollow stem augers, with the exception of boring B6; boring B6 was installed using mud rotary drilling since subsurface obstructions had previously been encountered with hollow stem augers in this area. Split-spoon samples were screened with a photo-ionizing detector (PID) and selected sample intervals were collected for laboratory analyses.

Temporary 2-inch diameter continuous-wrap PVC screens were placed in seven boreholes (Bl through B5, B7 and B8) to evaluate the presence or absence of mobile NAPL within the formation, to sample NAPL and/or ground water and obtain fluid level measurements. All borings were sealed at the conclusion of the field investigations -- all screens were removed and boreholes tremie grouted.

Four over water borings (B9 through and obtain samples for chemical analyses B12) were completed in order to provide stratigraphic evaluation and to obtain samples for chemical analyses within the Canal (Figure 3). Borings B9 through B12 were completed by EDI using a barge mounted skid-rig without rotary capabilities. A four-inch diameter steel casing was driven into the sediments with the rig's hammer and samples were collected by advancing a 3-inch diameter split-spoon within the steel casing. Borings B9 through B12 extended approximately 15 to 21 feet below the sludge line.

Three over water borings (B13 through B15) were completed in order to collect samples for addition chemical analyses. These borings were completed by DRAI

personnel using a hand auger from a small boat and extended from 0.5 foot to four feet into the sludge layer.

4.2 Monitoring Well Installations

A total of 15 monitoring wells were installed, 9 shallow wells (PKMW1 through PKMW9) screened within the unconfined zone and 6 deep double-cased wells (PKMW10 through PKMW15) screened within the confined zone (Figure 4). All wells are constructed of 4-inch diameter, schedule 40 PVC riser and 20-slot continuous wrap screen. Well construction details are summarized in Table I. All well locations and elevations were surveyed by Casey and Keller of Millburn, New Jersey a New Jersey licensed surveyor. Well logs, Forms A and B are provided in Appendix A.

The wells were installed by EDI and all drilling activities were supervised by a DRAI hydrogeologist. The shallow wells were installed using hollow stem augers, while the deep wells were completed using mud rotary. A biodegradable mud (Revert™) was used with the mud rotary method in order to avoid potential mud-coating of the boreholes. The deep wells were double-cased with eightinch diameter steel outer casings which were set 1 to 2 feet into the silt and clay layer. The annular space between the steel outer casing and the borehole was pressure-grouted with a portland cement-bentonite mix. The deep well screens were set starting near the lower foot of the silt and clay layer and extending into the sand and gravel layer. Continuous split-spoon sampling was performed at locations where the stratigraphy had not been previously Soil samples were collected from selected intervals for documented. laboratory analyses. All wells were developed for one hour or until the discharge water became clear. A centrifugal pump and dedicated polypropylene pipe was used for well development.

4.3 Soil Sampling

Soil samples were collected during the installation of soil borings and monitoring wells in order to confirm field observations and PID readings, evaluate soil quality by laboratory analysis and to assess the extent of hydrocarbon within the formation.

A total of 25 soil samples were collected from various depth intervals at borings B1 through B6 and at monitoring well locations PKMW1 through PKMW3, PKMW7, PKMW8 and PKMW10 through PKMW15 as part of the IRM investigation. Soil samples were collected using decontaminated split-spoon samplers. With the exception of samples from PKMW13, PKMW14 and PKMW15, samples were analyzed for total petroleum hydrocarbons (TPH) by EPA Method 418.1 and/or by gaschromatography (GC) Method 8015. Samples from PKMW13, PKMW14 and PKMW15 were obtained in order to determine the relative saturation of water and petroleum within the soil pore spaces and to evaluate the potential mobility of NAPL within the formation. Selected samples were also analyzed for volatile organic compounds (VOCs) and base neutrals and acid-extractables (BNAs) by EPA Contact Laboratory Program (CLP) Methods. All VOC and BNA results will be incorporated in the Remedial Investigation (RI) Report.

Soil samples from PKMW13, PKMW14 and PKMW15 were collected using a modified California Sampler (four, 6-inch long plastic sleeves inserted into a 3-inch diameter split spoon). Immediately after obtaining the sample, the 6-inch plastic sleeves containing the soil cores were frozen and stored on dry ice. The selected samples were shipped on dry ice to Core Laboratories in Houston, Texas for analysis. Porosity, percent oil and percent water saturation of the

soil pore space was determined using American Petroleum Institute (API) or ASTM methods. A description of the analytical methods and a complete set of the laboratory packages are provided in Appendix B. TPH analysis (Method 418.1) was also completed on selected soil samples by Quanterra Laboratory (formerly IT) in Somerset, New Jersey.

4.3.1 Analytical Results

Typically, the highest TPH concentrations are found within the fill and upper three feet of the confined zone silty sand and gravel layers. The percent oil and water saturation of the soil pore space results of samples collected within the sand and gravel layer indicated that the percent oil saturation increases near the top of this layer. However, most of the soil samples had oil saturation below 10%. Low TPH concentrations (less than 100 ppm) were generally detected within the silt and clay layer.

The analytical results of the soil samples are summarized in Tables II and III and presented on Figure 6. The soil TPH concentrations ranged from 43 parts per million (ppm) (sample B1/13-14) within the silt and clay layer to 35,000 ppm within the fill layer (sample B5/7.0-7.5) (Table II). The GC-fingerprints are similar to motor oil or a mixture of motor oils with either mineral spirits, No. 4 oil or unknown. Several of the fingerprints could not be matched to any of the standards.

The percent oil saturation ranged from 0 to 19.9% of the pore volume within the sand and gravel layer (Table III). At well locations PKMW13 and PKMW14 the highest oil saturation is present near the contact between the silt and clay layer and the sand and gravel layer; oil saturation decreases with increasing depth. Total porosity ranged from 18 to 29% (Table III).

4.4 Ground Water and NAPL Sampling

During the IRM investigation NAPL was detected in several wells (discussed in Section 4.6). In order to characterize the NAPL, samples were obtained from the temporary screen within boring B4 and wells EB19, PKMW11 and PKMW12. The samples were submitted to IT Analytical Services for VOC, BNA, GC-fingerprinting and specific gravity analyses. Analytical results are summarized in Tables IV through VI and are presented in Figures 7 through 9. Additional NAPL samples were also collected from wells EB19, PKMW8, PKMW11, PKMW12 and PKMW14 and were analyzed by Core Laboratory for viscosity and specific gravity (Table VI).

Ground water and surface water samples were also collected and analyzed for VOCs. The results will be incorporated into the site's RI Report.

4.4.1 NAPL Analytical Results

Typical of weathered hydrocarbons, there were few targeted VOCs or BNAs detected. However, when detected the concentrations were relatively low. Total targeted VOCs ranged from 23 to 990 ppm at wells EB19 and PKMW11, respectively (Table IV and Figure 7). The primary targeted constituents detected in wells PKMW11 and PKMW12 were 4-methyl-2-pentanone (methyl isobutyl ketone or MIBK) and n-propyl benzene. MEK was also detected in wells PKMW12 (17 ppm) and PKMW11 (38 ppm). Minor amounts of 1,1,2,2-tetrachloroethane and 1,1,1-trichloroethane were found in a sample from well PKMW12. In the sample from well EB19, minor amounts of chloroform and o-xylene were also detected. Tetrachloroethane and acetone were found in the sample from boring B4.

The total targeted BNA concentrations in NAPL ranged from approximately 210 to 2,400 ppm at boring B4 and well PKMW12, respectively (Table V and Figure 8). The primary constituents found in all samples were 2-methylnapthalene, phenanthrene and pyrene.

GC-fingerprinting results indicate that samples from wells PKMW11 and PKMW12 contained constituents similar to an aviation fuel (Table VI and Figure 9). The sample from boring B4 was matched best to the motor oil and mineral spirit standards. Sample EB19 could not be correlated to the standards.

Specific gravities of NAPL range from 0.86 (PKMW12) to 0.93 (PKMW8). Viscosity measurements range from 7.13 centipoise (cp) (PKMW12) to 112.3 cp (PKMW8). The viscosity of water is 1 cp at 15°C. The specific gravity and viscosity of NAPL in wells PKMW11 and PKMW12 are similar, although the specific gravity and viscosity of the NAPL in well PKMW14 is higher (Table VI).

4.5 Tidal Investigation

A tidal investigation was conducted in order to evaluate the influence of tidal fluctuations in the Canal on shallow and deep wells and possibly NAPL migration. Fluid level measurements were recorded in six deep wells (PKMW10 through PKMW15), 11 shallow wells (PKMW1 through PKMW9, EB15 and EB19) and tidal gauging stations in the Canal and the Kill Van Kull. Specific conductivity (conductivity) values were measured at selected shallow and deep wells in order to evaluate salinity within the unconfined and confined ground water zones. In addition, tidal fluctuations were recorded during the pumping tests of the confined wells.

4.5.1 Field Procedures

Fluid levels in the wells were measured manually (interface probe) and with automatic data recorders (ADRs). The ADRs used included Steven Type F mechanical water level recorders, In-Situ Hermit 1000, Hermit 2000 and Unidata Portable Data Loggers (PDL); the Hermits and PDL use pressure transducers to measure fluid levels. Continuous water-level measurements (at 15 minute intervals) were recorded by the various instruments for time periods ranging from 24 to 48 hours. ADR fluid level measurements were supplemented by manual NAPL and water-level measurements to determine NAPL thickness.

The specific conductivity was measured at one to two foot depth intervals within the selected wells (PKMW4, PKMW9, PKMW10, PKMW13 and PKMW15). Only the surface interval within the Canal was measured; measurements were collected near the Canal's tidal gauging station. Conductivity measurements were completed using a Yellow Springs Instrument (YSI) TLC and Model 33 conductivity meters.

4.5.2 Results

Fluid level results of the tidal investigations are summarized in Table VII and in hydrographs for shallow wells, deep wells and paired shallow and deep wells in Figures 11, 12 and 13, respectively. During the investigation, the Canal level ranged from approximately 3.2 feet to -2.0 feet mean sea level (msl) and varied a total of 4.5 to 5.0 feet over a tide cycle.

Shallow Wells. For the purpose of this discussion, the shallow wells are divided into two categories: the northern and southern area wells. The seven northern area shallow wells (PKMW1 through PKMW4, PKMW8, PKMW9 and EB19) are

located north of the Canal. The four southern area shallow wells (PKMW5 through PKMW7 and EB15) are situated adjacent and east of the Canal.

In general, fluid level elevations measured in the northern area shallow wells varied less than one foot over a tidal cycle, with exception of well PKMW4 (Table VII). The water levels within well PKMW4 fluctuated nearly 2 feet during a tide cycle. Delay times varied from 30 to 160 minutes. Over a tidal cycle NAPL thicknesses varied less than 0.5 foot.

Ground water flow within the unconfined zone in the northern area was towards the south with an overall hydraulic gradient of 0.003 foot/foot during both high and low tide (Figure 14). However, the hydraulic gradient is tidally effected near the Canal. For example, steep hydraulic gradients are observed at wells PKMW3 and PKMW4 at low tide. A gradient reversal (Canal is higher than water levels in the well) is observed at well PKMW4 for nearly half of the tide cycle (Figure 11). Overall, the change in hydraulic gradients due to tidal changes is diminished at wells located at a greater distance from the Canal.

In the southern area shallow wells (PKMW5, PKMW6, PKMW7 and EB15) water level responses to tidal fluctuations within the Canal varied (Table VII). Water level fluctuations ranged from 0.31 foot (PKMW7) to 2.80 feet (PKMW5) during a tide cycle. Delay times of 0.5 to over 5 hours were noted within the southern area wells. Gradient reversals were observed all four wells during a portion of the tidal cycle (Figure 11). NAPL was not observed within any of the southern area wells.

Deep Wells. In the confined ground water zone, the top of fluid level fluctuations within the deep wells ranged from 0.9 to 2.1 feet in well PKMW15 and PKMW13, respectively (Table VII). Ground water levels (corrected for NAPL when necessary) in the deep wells are above the top of the silt and clay layer throughout the tide cycle. During both high and low tides ground water flow into the Canal is towards the south with a slight deviation of flow to the southeast during high tide (Figure 15). The overall hydraulic gradient (as calculated between wells PKMW15 and PKMW13) is 0.008 ft/ft at low tide, but flattens out to near zero at high tide. For nearly 50% of the tidal cycle there is a gradient reversal from the south to the north between the Canal and wells PKMW12 and PKMW13 (Figure 12).

Delay times ranged from 28 to 228 minutes at wells PKMW13 and PKMW15. Delay times during a rising tide are nearly twice as long as falling tide delay times. NAPL thickness fluctuations range from 0.33 (PKMW12) to 1.27 feet (PKMW11).

Shallow/Deep Wells. In the paired shallow and deep wells, fluid level fluctuations in the deep wells are generally greater than in the shallow wells (Figure 13 and Table VII). A downward vertical gradient is noted at all of the paired wells; fluid levels in the deep wells range from 0.75 to 7 feet below fluid levels within the shallow wells.

Water Conductivity. Conductivity value measurements are presented in Figure 16. Conductivity values measured in the Canal ranged from approximately 34,000 to 35,000 microhms/centimeter (umhos/cm). In shallow wells PKMW4 and PKMW9 conductivity ranged from 1,328 to 9,750 umhos/cm within their screened intervals with averaged values of approximately 1,300 to 8,300

umhos/cm, respectively. In deep wells PKMW10, PKMW10 and PKMW15, conductivity ranged from 5,730 umhos/cm (PKMW13) to 1,180 umhos/cm (PKMW15) within their screened intervals with averaged values of approximately 2,100 to 3,400 (umhos/cm). In the paired wells (PKMW4 and PKMW13) closest to the Canal, the average conductivity in the shallow well is approximately 2 times greater than that in the deep (8,300 versus 3,400 umhos/cm). In paired wells (PKMW9 and PKMW10) located approximately 165 feet inland of the Canal, the conductivity is higher in the deep well (1,300 versus 2,400 umhos/cm). The vertical distribution of conductivity in the confined zone indicates stratification of water with the higher content of salt on the bottom (Figure 16). This is indicative of historical brackish water intrusion into the confined zone.

4.6 NAPL Occurrence in Wells

During the installation of both borings and monitoring wells, NAPL was locally encountered at several locations. Figure 18 provides a summary of apparent NAPL thicknesses in various wells.

NAPL in wells in limited to the northern portion of the Canal area. NAPL was measured in only four of the 14 shallow wells: EB19, PKMW1, PKMW3 and PKMW8. As observed in wells PKMW2 and PKMW3, NAPL thickness tends to decrease or disappear closer to the Canal.

NAPL was measured in three of the six deep wells screened within the confined zone. Deep wells PKMW11, PKMW12 and PKMW14 had measurable thicknesses of NAPL, with thicknesses in PKMW11 and PKMW12 measuring between 9 and 11 feet of NAPL. Ground water/NAPL elevations and thicknesses were measured numerous times during the investigation. With one exception well PKMW12, NAPL thickness, remained relatively constant during the investigation (discussed in Section 4.6.1).

The apparent NAPL thicknesses measured in wells PKMW11, PKMW12 and PKMW14 have no correlation to the thickness of NAPL saturated soil within the confined ground water zone. NAPL trapped beneath the clay confining layer slowly seeps into the well casings, rises within the well casings (it is less dense than water) and accumulates with time. The rate of accumulation of NAPL in these wells (after evacuation of NAPL by pumping) is an indication of the amount of mobile NAPL in the vicinity of the wells (Section 4.6.1, below). However, after equilibrium conditions have been achieved, even wells with different recharge rates can have similar apparent NAPL thicknesses.

4.6.1 NAPL Recharge Tests - Wells PKMW12 and PKMW11

On April 19, 1994, approximately 4.5 gallons of floating NAPL (and 0.5 gallons of water) were skimmed from well PKMW12 with a peristaltic pump. No NAPL was detected in the well at the end of pumping. On April 20, 1994, fluid levels were measured hourly for approximately 10 hours at all three deep wells and the tidal gauging station. Fluid level measurements continued through May 2, 1994 (Figure 17). NAPL thickness within well PKMW12 has increased at an average rate of 0.23 feet/day.

Based on NAPL recovery tests completed at well PKMWll (detailed in Section 4.6.3) under static conditions NAPL recharges into the well at a rate of 0.005 to 0.02 gpm.

4.6.2 Bail Down Test - Well EB19

In order to evaluate the actual thickness of mobile NAPL in the subsurface within the unconfined zone, a bail down test was performed on well EB19 (Gruszcenski, 1987).

NAPL in well EB19 was evacuated on September 13, 1994 with a peristaltic pump. The pump's intake line was placed near the top of the NAPL surface in order to avoid evacuating water. NAPL and ground water levels were measured before and after the NAPL was evacuated.

The ground water and NAPL measurements generated during the bail down test was graphically analyzed (Appendix C). Prior to evacuating NAPL from the well, the NAPL thickness was 1.82 feet; NAPL thickness after evacuation was 0.46 feet. The inflection point (the point at which the water table begins to be depressed by the recharging NAPL) was encountered approximately 8 minutes after evacuating the NAPL. The calculated mobile NAPL thickness within the formation in the vicinity of EB19 is approximately 0.49 foot or approximately 4 times greater than the mobile NAPL calculated within the adjacent formation.

4.7 Aquifer Tests - PKMW11 and PKMW12

A series of aquifer tests (step tests and pumping/recovery tests) were completed at two confined zone wells PKMWll and PKMWl2. The objectives of these tests were to evaluate the following: (1) aquifer characteristics; (2) hydraulic connection between the Canal and the confined zone; (3) NAPL migration potential into the Canal; and (4) hydraulic connection between the unconfined and confined zone.

4.7.1 Field Procedures

Total fluids (NAPL and ground water) was pumped from each well using a trailer mounted centrifugal pump. Water and NAPL pumped during the tests was discharged into a nearby sewer line connected to the onsite treatment plant. Continuous fluid levels were measured at the three unconfined wells (PKMW3, PKMW4 and PKMW9) and at all of the confined wells (PKMW10 through PKMW15) were measured using pressure transducers. The stage level within the Canal and the Kill Van Kull were also monitored. Additional measurements were collected manually using an interface probe in order to determine NAPL thickness.

In order to evaluate the potential hydraulic connection between the Canal and the confined ground water zone, the discharge water from the pump was monitored in the field for changes in specific conductivity. In addition, discharge samples were also collected for laboratory analysis of sodium, chloride and total dissolved solids (TDS) and VOCs; these parameters are indicative of brackish surface water. Discharge samples were also analyzed for VOCs.

4.7.2 Results

Fluid levels measured during the aquifer tests are presented in Figures 12, 13, 19, 20 and 21. The hydrographs of individual wells monitored during the pump tests are provided in Appendix C.

Step tests were completed to determine the sustainable pumping rate appropriate for longer-term pumping tests. Well PKMW12 was pumped at rates of 28 and 75 gallons per minute (gpm) at drawdowns four and eight feet respectively (Figure 12).

The pumping test on well PKMWl2 was completed over a 12-hour period at an average rate of 86 gpm. It is important to note that PKMWl2 is located approximately 38 feet from the bank of the Canal. Additionally, the wooden bulkhead in this area extends into the confined sand and gravel unit. Drawdown in the pumping well was approximately 13 feet (Figures 12, 19 and 20). Drawdown was observed in all deep wells during the pumping test as depicted on Figure 19. Fluid levels within the shallow unconfined zone wells were not affected by pumping of the confined zone (Figure 13). The aquifer characteristics are summarized in Table VIII.

The pumping test on well PKMWll was completed over a 24-hour period at an average rate of 81 gpm. Drawdown in the pumping well was approximately 10 feet (Figures 12, 19 and 21). Drawdown was observed in all deep wells during the pumping test as depicted on Figures 12, 19 and 21. Fluid levels within the paired unconfined zone wells were not affected by pumping of the confined zone (Figure 13).

For the pumping test on wells PKMWll and PKMW2, the aquifer characteristics are summarized in Table VIII. A summary of the discharge samples collected during the test are summarized in Tables IX and X for both pumping tests. No significant changes in sodium, chloride, TDS, conductivity or VOC concentrations were observed during the pumping tests.

Based on the data, the bulkhead appears to act as a partial hydraulic barrier boundary significantly limiting flow between the Canal and the confined ground water zone to the northeast. During the PKMW11 pumping test, the individual hydrographs of wells PKWM12 and PKMW13 are more characteristic of wells adjacent to a barrier boundary, than wells adjacent to a recharge boundary. If the Canal served as a recharge boundary less drawdown would be expected in well PKMW12 and PKMW13 during the pumping tests due to recharge from the Canal (Figure 19). Also, this drawdown would be expected to stabilize quickly. The shape of the cone of depression (Figure 21) indicates some, but potentially a minor contribution of water from the Canal. This hydraulic effect could not be evaluated during the PKMW12 pump test because there are no deep observations wells between the Canal and PKMW12.

4.8 NAPL Recovery Tests - Well PKMW11

Beginning November 1, 1994, a series of short-term pumping tests (generally less than 8-hours) were completed on well PKMW11 in order to evaluate the feasibility of NAPL recovery from the confined zone.

During the pumping test the following procedure and sequence was generally followed: (1) NAPL pumping; (2) ground water pumping; and (3) dual pumping (water and NAPL pumping with separate pumps). The results of the NAPL recovery tests are summarized in Table XI.

The pump used during these tests was a dual pump system from Clean Environment Equipment (CEE). The pumping system is operated by two double diaphragm pumps and has a NAPL skimmer which floats near the surface of the NAPL during tidal fluctuations. NAPL was pumped into 55-gallon drums and ground water was pumped into a nearby sewer line. The NAPL and ground water flow rates were measured using in-line flow meters.

During NAPL skimming alone (no ground water depression), the NAPL recharge rate into the well ranged from 0.005 to 0.02 gpm (Table XI). During dual

pumping, and at a ground water pumping rate of approximately 4 gpm, the NAPL recharge into the well ranged from 0.008 to 0.05 gpm. During both skimming and dual pumping, NAPL recharge rate is affected by tide cycle - higher recharge at low tide.

NAPL only skimming can produce 0.005 to 0.02 gpm of NAPL. NAPL pumping accompanied by low rate ground water pumping (4 gpm) appears to increase the rate of NAPL recovery by almost two-fold.

5.0 CONCLUSIONS

The Canal is a surface water body with a tidal range varying up to 5 feet. The area of interest is bordered to the northwest and south by IMTT and to the north and east by Exxon.

The following conclusions are based on observations, measurements and test results conducted at the Platty Kill Canal area. In general, the hydrogeology of the area consists of a shallow unconfined zone (within the fill) and a deeper confined zone (sand and gravel) separated by a continuous silt and clay layer. Two vertical bulkheads along the edge of the Canal act as a physical boundary between the two ground water zones and the tidal Canal.

5.1 <u>The Unconfined Shallow Ground Water Zone</u> An unconfined shallow ground water zone with thin isolated pockets of NAPL exist within the fill material and are not migrating to the Canal.

The shallow unconfined zone is established within a fill material. The saturated thickness is about 6 feet and the general flow direction is to the south. Only well PKMW4 located within 19 feet of the Canal showed significant tidal influence and this well does not contain NAPL. In the northern portion of the IRM area, tidal fluctuations within the water table wells were generally less than one foot, and delay times typically ranged from 30 to 160 minutes (as observed in 4 wells). In the area near the Canal, gradient and flow reversals were observed.

Four of the 13 shallow wells in this area contain NAPL (PKMW1, PKMW3, PKMW8 and EB19) ranging in thickness from a sheen to 3.63 feet as measured during the 1994 investigation (Table VII). The product in well PKMW8 (located north of the Canal) contains 0.67 feet of NAPL which is different in appearance from the rest of the NAPL found in the shallow and deep wells. With the exception of well PKMW3 (with a NAPL thickness of a sheen to 0.24 feet), none of the shallow zone wells located immediately adjacent to the Canal contain NAPL.

Based on the bail down test results, the mobile NAPL thickness in the formation at well EB19 was determined to be less than 0.5 foot, or four times thinner than the apparent NAPL thickness measured in the well casing (1.9 feet) under static conditions. The wells, between the Canal and wells containing NAPL, have virtually no NAPL; it was determined that there is no migration of NAPL from this zone to the Canal.

5.2 The Clay and Silt Layer

A laterally continuous and relatively thick clay and silt layer exists beneath the IRM area. This layer separates the unconfined and confined zones and provides a confining layer to the deep zone.

Based on observations and logging of six confined zone wells (PKMW10 through PKMW15), 15 borings and 13 shallow wells, there is a continuous and relatively thick clay layer (2 to 8 feet in thickness) beneath the entire IRM area. This clay layer is first encountered at approximately 10 feet bgs. This layer separates the upper unconfined water bearing zone from the deeper confined zone. The lateral continuity was also confirmed during tidal and pumping test water level measurements based on the lack of hydraulic connection between the unconfined and confined zones. Borings advanced in the Canal bed did not confirm the presence of the clay layer. This could be the result of

construction and/or dredging operations of the Canal. However, a thick layer of sludge (about 8 to 15 feet) is present within the Canal bed above the sand and gravel unit.

5.3 The Confined Deep Ground Water Zone

A confined deep ground water zone with discontinuous layers of NAPL impacted sand and gravel exists beneath the clay and silt confining layer.

The confined zone is defined by 6 wells completed into a sand and gravel layer ranging from about 5 to 12.5 feet in thickness. The distance of the deep wells from the Canal ranges from 30 feet (PKMW13) to 400 feet (PKMW15). Based on observations made during well and soil boring installations, tidal and pumping tests, it was determined that this layer is a horizontally extensive confined ground water zone.

5.3.1 Occurrence of NAPL

The occurrence of NAPL impacted material within the confined zone, is limited to the top 3 feet of the sand and gravel layer.

During the drilling of the six deep wells, evidence of NAPL was noted in the soils taken from just below the silt and clay layer. The origin of this NAPL is unknown. When encountered, the average thickness of confined zone soils in which discontinuous layers of petroleum impacted sand and gravel were observed is about 3 feet. Depending on the horizontal location of the deep wells within the confined zone and the depth of the sample, the petroleum-impacted soil appeared to have different degrees of NAPL saturation. At wells PKMW10 and PKMW13 through PKMW15, NAPL saturation was minimal. The highest degree of saturation was observed in wells PKMWll and PKMWl2. Measurable NAPL was detected in only three of the wells: PKMW11 (9 to 11 feet thick); PKMW12 (about 9 to 10 feet thick); and, PKMW14 (0.06 to 0.3 feet thick). Wells PKMW10, PKMW13 and PKMW15 contained no NAPL. Because of the confined conditions, the NAPL thicknesses measured in the wells do not represent the actual NAPL thickness in the sand and gravel layer. This is due primarily to the hydrostatic head in the confined zone which forces the NAPL into the well casings where it accumulates. The two wells containing the most NAPL (PKMW11 and PKMW12) exhibit different NAPL recharge rates. NAPL in well PKMW11 recharges within the well casing in a very short period of time (24 hours). NAPL in well PKMW12 recharges at an average rate of less than 0.2 ft/day. Based on well locations and NAPL distribution, the NAPL impacted soils in the confined zone was delineated (Figure 10).

5.3.2 Tidal Influence

All confined zone wells are subject to tidal influence. Based on the dampened tidal amplitude in the wells and the long delay time, a tidal barrier or its equivalent exists between the confined layer and the Canal.

The confined zone is subject to tidal influence as observed in all 6 wells. The magnitude of the tidal fluctuations and the delay time are partly a function of the distance of the well from the Canal. Wells near tidal surface water are influenced by the fluctuating water levels. The magnitude of the influence (amplitude) and the delay time are a function of distance to the tidal body and the storage co-efficient(s) of the aquifer. The observed tidal fluctuations ranged from 0.8 to 2.1 feet, whereas delay times varied between 26 and 228 minutes. The observed delay time and the amplitude of water level changes for wells PKMW12 and PKMW13 exceed the calculated delay time by an

order of magnitude, due to the dampening effect of the bulkhead system which is acting as a partial barrier. Tidal pressures may be transmitted beneath the bottom of the bulkheads to the confined ground water zone. The bulkheads are thought to terminate within this sand and gravel layer (Figure 4).

The natural flow in the confined zone is to the south during low tide and to the south-southeast during high tide. However, during high tide a reversal in flow is observed in the area close to the Canal. The water elevation in the Canal reaches about 1.7 feet and 2.6 feet higher than wells PKMW12 and PKMW13, respectively. During the tidal study this gradient reversal was observed to occur about 50% of the time. Also, between the low and high tidal cycles there are times when the hydraulic gradient is flat (i.e., no flow). See Section 5.6 for further discussion.

5.3.3 Pumping Tests

During aquifer tests, the confined wells yielded up to nearly 90 gpm. Also, aquifer drawdown characteristics and effluent quality suggest recharge from the Canal is minimal.

During the pumping tests of the confined zone wells (PKMW12 and PKMW11), the well yields were about 90 and 80 gpm with drawdowns of 10 and 15 feet, respectively. The pumping influence of both wells extended beneath the entire investigation area. Based on the number of deep wells and their location, the affected area of pumping and the shape of the drawdown, the bulkhead acts as a partial barrier or boundary to recharge from the Canal. Considering the duration of the PKMW11 test, the location of the two observation wells (PKMW12 and PKMW13) nearest to the Canal and the measurements of water conductivity during the test a recharge boundary was not observed at the bulkhead wells. For example, toward the end of the pumping test of well PKMWll the rate of drawdown change in wells PKMW12 and PKMW13, did not level out, as would be expected if there was recharge from the Canal. The average transmissivity and storativity values for the confined zone were determined to be 13,000 gpd/ft and 1*10-4, respectively. Also, the conductivity of the ground water in wells PKMW12 and PKMW13 did not increase, as would be expected if there was recharge from the Canal.

During the pumping test of wells PKMW12 and PKMW11 the water conductivity (in umhos/cm), TDS, Na and Cl concentrations of the effluent remained relatively constant. Furthermore, conductivity measurements of water from wells PKMW13 and PKMW12 during the 24 hour pumping test of well PKMW11 indicated relatively constant concentrations of the above parameters and no contribution of water from the Canal to the confined zone. These observation indicates no breakthrough of saline Canal water into the confined zone in the vicinity of the pumping wells. Water conductivity measured in the Canal is about one order of magnitude higher than in either the shallow or the deep wells. Background conductivities in this area are about 1,200 umhos/cm, and the Canal is about 35,000 umhos/cm.

5.4 Unconfined/Confined Zone Relationship

The two ground water zones are effectively separated by the clay and silt layer.

The pumping of the confined zone wells at a relatively high rate of 80 to 90 gpm for periods of 12 and 24 hours, did not effect the water levels in nearby

shallow wells. Therefore, the confined layer of silt and clay is an effective barrier to vertical flow.

5.5 Unconfined Zone/Canal Relationship

The unconfined zone is influenced by the tide at only two wells located 30 feet from the Canal.

From the 13 unconfined wells located in the Canal area, the only significant tidal influence was measured in well PKMW4 located only 19 feet from the Canal (next to confined well PKMW13) and well PKMW3 located 28 feet from the Canal.

5.6 Confined Zone/Canal Relationship

Water exchange between the confined zone and the Canal is minimized by changes in the direction and magnitude of the hydraulic gradient due to the tide and the presence of a physical barrier (the bulkhead).

The silty sand and gravel layer of the confined zone is found at the same elevation as the sludge layer located at the bottom of the Canal. Wooden bulkheads are present at the confined zone/sludge interface. Although the actual depth of the bulkheads could not be confirmed, they are believed to be terminated within the sand and gravel layer (Figure 4). Regardless, the bulkheads act as a barrier to the tidal effect and ground water flow. Other than in the area adjacent to the Canal, ground water flow in the deep zone is to the south. However, in the area near the Canal, the flow is not uniform or continuous overtime but rather cyclic with periods of no flow and reversed flow depending on the tide.

Only during low tide does ground water flow in the direction of the Canal. Also, there are periods between low and high tide that the hydraulic gradient near the Canal is "flat" and no flow is taking place. Overall, the flow of water from the deep zone to the Canal occurs less than 50% of the time, and there is probably minimal movement of water across the interface between the Canal and sand and gravel layer.

5.7 Potential NAPL Migration

Based on observations and measurements of the confined ground water zone in the area near the Canal and north of the bulkhead, it is unlikely that NAPL seepage from the deep confined aquifer contributes a volume of NAPL which could be identified and measured relative to the existing volume of NAPL in the Canal.

NAPL, when observed in the deep zone, exists in discontinuous layers within the top 3 feet of the sand and gravel material. These 3 feet of layers are characterized by discontinuous lenses or layers containing petroleum-impacted soils. The oil saturation values in this 3 foot layer range from 0 to 20% of the soil pore space based on six tests (Table III). Most oil saturation values were reported to be less than 10%.

Based on specific weight and viscosity determinations for the NAPL samples found in the deep zone (wells PKMWll and PKMWl2), it was determined that the ratio of NAPL hydraulic conductivity (K) to water hydraulic conductivity is about 1 to 9. Assuming the same hydraulic gradient, the NAPL will move 9 times slower than water through the same formation.

Based on field observations, only wells PKMW11, PKMW12 and to a lesser extent PKMW14, contained oil saturation which could allow for NAPL migration, (Levorsen, 1967; Huntley, Hawk and Corely, 1994). However, considering the low oil saturation values, the relative hydraulic conductivity of the NAPL to water, the tidal affect on the hydraulic gradient and flow direction, and the presence of the bulkhead, it is unlikely that NAPL seepage from the deep confined aquifer contributes a volume of NAPL which could be identified and measured relative to the existing volume of NAPL in the Canal. No evidence was found to relate any NAPL discharge from the IRM site to the Canal.

In summary, in the northern portion of the Canal area in the deep zone, mobile NAPL exists in three wells, and well PKMW-ll is thought to be near the center of the plume. The NAPL recharge rate into this well is the greatest. Some recharge also occurs at PKMW-l2. Evidence supports the argument that this deep zone NAPL is not migrating into the Canal, due to the presence of the bulkhead system which is acting as a barrier. Although this cannot be confirmed without removal and inspection of the bulkhead system, the hydrogeologic data (tidal studies and pumping tests) supports the argument that the barrier exists. For migration to occur, a wedge of NAPL would need to accumulate behind the bulkhead, thick enough to extend to the bottom of the bulkhead, and migrate to the surface through the Canal sediments. None of the borings adjacent to the Canal suggest that a thick or even significant NAPL wedge exists behind and adjacent to the bulkhead.

6.0 RECOMMENDATIONS

The following recommendations are proposed for the Platty Kill Canal area in order to address specific IRM tasks and to reduce the observed NAPL volume at this area.

Recommendations for future work regarding the shallow ground water zone include monitoring the wells to ensure no future migration of NAPL into the Canal occurs. In addition, a schedule for pumping the four wells with NAPL will be developed to recover NAPL in this area.

Recommendations for future work regarding the deeper confined ground water zone include installing a remedial pumping system in PKMW-11 to reduce the thickness of NAPL. Monitoring of all six wells should also be performed periodically, to gauge the effectiveness of the system, and expand it if appropriate.

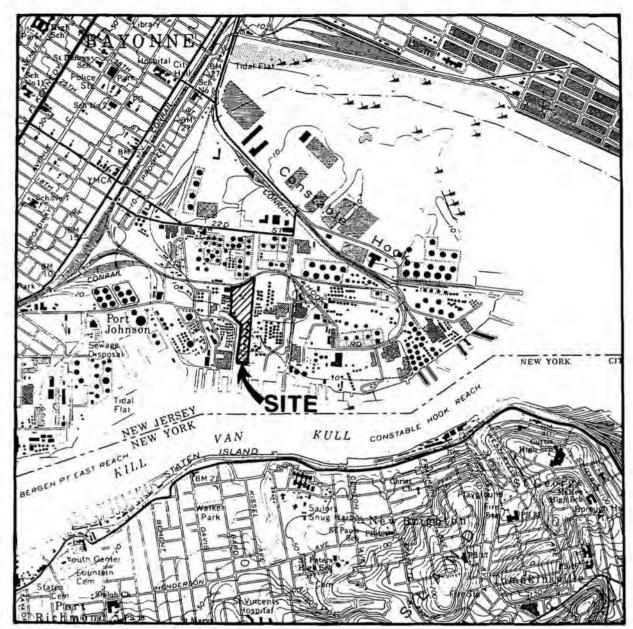
- (1) Three pre-existing wells EB15, EB90 and EBR22 are in poor structural condition and should be sealed in order to avoid potential ground water contamination. No NAPL has been measured in any of these wells. Wells should be sealed in accordance with NJDEP protocols.
- (2) Since shallow well EB19 can provide NAPL and ground water level data during the proposed NAPL recovery operations, the well should be retained. Well EB19 is located in the thickest NAPL area within the unconfined ground water zone. The following repairs have already been completed including: grout seal, steel flush mount and concrete pad. No known NJDEP permit exists for this well, Exxon should proceed with the process of obtaining a well permit from the NJDEP.
- (3) A quarterly fluid level monitoring program of all confined and unconfined wells should be implemented to monitor the presence (or absence) of NAPL. Since no NAPL has been found in the southern portion of the Canal area (shallow wells PKMW4 through PKMW7) no additional IRM activities are recommended, only routine monitoring.
- (4) NAPL from the four shallow wells (EB19, PKMW1, PKMW3 and PKMW8) should be recovered twice a week with a vacuum truck. The wells should be measured quarterly for ground water and NAPL levels. The vacuum truck recovery should be implemented using a dedicated section of polypipe for each individual well. A revised recovery schedule will be developed based on the results of the first six months of recovery.
- (5) Based on the aquifer and dual pump tests completed on well PKMW11, a NAPL skimmer pump installed and operated in well PKMW11 should provide an efficient method of NAPL recovery within the confined zone. NAPL within well PKMW11 recharges relatively quickly when compared to well PKMW12. The skimmer pump should be able to accommodate tidal fluctuations within the well. During the operation of the skimmer pump system, testing should be performed to determine whether or not ground water pumping will enhance NAPL recovery.

(6) Well PKMW12 should be evaluated to determine an appropriate NAPL recovery system. Until an appropriate NAPL recovery system is evaluated, NAPL from well PKMW12 should be recovered once every two weeks with a vacuum truck together with the unconfined wells, above.

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FIGURES



JERSEY CITY QUADRANGLE 7.5 MINUTE SERIES

PHOTOREVISED 1981







SITE LOCATION

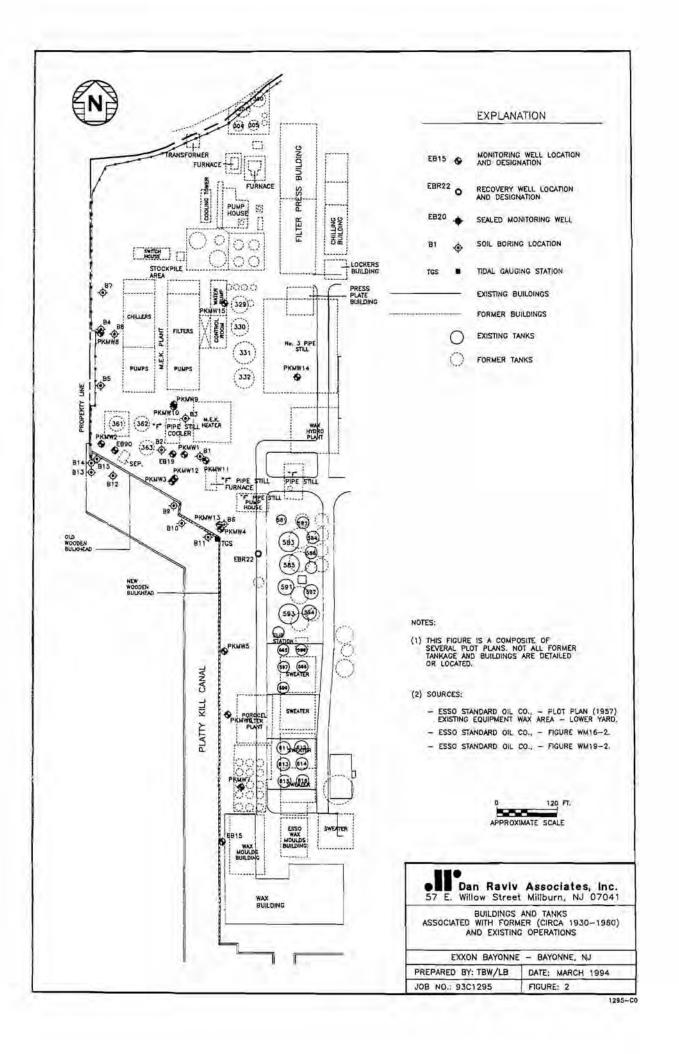
EXXON BAYONNE - BAYONNE, NEW JERSEY

PREPARED BY: TBW/MV

DATE: APRIL 1994

JOB NO.: 93C1295

FIGURE: 1





Consultants in hydrogeology and soils, site investigation/remediation, and ISRA compliance

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NON-AQUEOUS PHASE LIQUID (NAPL) INTERIM REMEDIAL MEASURES INVESTIGATION PIER 6 AREA BAYONNE PLANT - BAYONNE, NEW JERSEY

DRAI JOB NO. 94C1370

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July 25, 1995

TABLE OF CONTENTS

Section No.	Title	Page No.
1.0	INTRODUCTION	1
2.0	BACKGROUND	2
	2.1 Bulkhead Construction	2
	2.2 Geology and Hydrogeology	2 2 2
3.0	FIELD INVESTIGATION	3
	3.1 Monitoring and Recovery Wells	3
	3.1.1 Well Integrity Evaluation and Modifications	3 3 3 3
	3.1.2 Existing NAPL Recovery System	3
	3.2 NAPL Sampling	3
	3.3 NAPL Occurrence	4
	3.4 Tidal Investigation	4
	3.4.1 Field Procedures	4
	3.4.2 Results	5
	3.5 Pumping Tests	5
	3.5.1 Field Procedures	5 5 5 5
	3.5.2 Results	
	3.6 NAPL Recovery Tests	6
4.0	SUMMARY OF CONCLUSIONS	7
5.0	RECOMMENDATIONS	8
6.0	REFERENCES	9

LIST OF FIGURES

Figure No.	Title
1	Site Location
2	Bulkhead Construction, Soil Boring and Well Locations
3	Generalized Hydrogeologic Cross-Section A-A'
4	Ground Water Elevation Contours - Low Tide - June 28, 1995
5	Ground Water Elevation Contours - High Tide - June 29, 1995
6	Apparent NAPL Thicknesses - Low Tide - June 9, 1995
7	Apparent NAPL Thicknesses - High Tide - June 8, 1995
8	Hydrographs of Wells and Tidal Gauging Station - Tidal Study and Well EBR12 Pumping Tests - October 1994
9	Specific Conductivity Isocontours - High Tide - June 30, 1995
	LIST OF TABLES

. . .

Table No.	Title
1	Well Construction Details
11	Summary of TPH, Specific Gravity and Viscosity of NAPL
III	Summary of Tidal Investigation
IV	Summary of NAPL Recovery Tests

LIST OF APPENDICES

Appendix No.	Title
Α	Exxon Drawings: A-1 Repair of Bulkhead Between Piers 5 & 6 (No. 4J) A-2 65,000 D.W.T. Tanker Relationship to Bulkhead - North Side of Pier 6 Lower Hook (No. P6-1-11) A-3 Lower Hook General - Oil Recovery System (No. LHG-9-79)
	A-4 Lower Hook General - Oil Collection System Plot Plan (No. LHG-9-71)
В	Soil Boring and Well Logs
С	Laboratory Data Sheets
D	Tabulation of Field Measurements
	D-1 Water/NAPL Levels (Tables I through XVIII)
	D-2 Hydrographs of Water/NAPL Elevations in Wells and Tidal Gauging Station
	D-3 Contour Map Reporting Forms

NON-AQUEOUS PHASE LIQUID (NAPL) INTERIM REMEDIAL MEASURES INVESTIGATION PIER 6 AREA BAYONNE PLANT - BAYONNE, NEW JERSEY

DRAI JOB NO. 94C1370

1.0 INTRODUCTION

On behalf of Exxon Company, U.S.A. (Exxon), Dan Raviv Associates, Inc. (DRAI) has completed an interim remedial measures (IRM) investigation of the Pier 6 area at the International Matex Tank Terminal (IMTT) facility (the former Exxon Plant) in Bayonne, New Jersey (Figure 1). The Pier 6 IRM investigation was conducted in accordance with the November 27, 1991 Administrative Consent Order (ACO) between Exxon and the New Jersey Department of Environmental Protection (NJDEP), the January 29, 1993 Non-Aqueous Phase Liquid (NAPL) IRM Work Plan and the June 28, 1994 Addendum to the Work Plan.

The purpose of the IRM investigation was to evaluate potential NAPL migration into New York Bay (the Bay). As part of the overall scope of work, the following tasks were completed (with their respective dates): (1) inspection of the bulkheads during low tide from a boat (August 1994); (2) evaluation of the integrity of the existing monitoring wells (August 1994); (3) repair of existing wells, when necessary (November 1994); (4) investigation of tidal influence on fluid levels in the wells (beginning October 1994); (5) determination of chemical and physical NAPL characteristics (November 1994 and February 1995); (6) establishment of aquifer characteristics through a pumping test on well EBR12 (October 1994); (7) completion of NAPL recovery tests to evaluate the NAPL recovery rate from existing wells (June 1995), and; (8) documentation of the existing NAPL recovery system (July 1995).

2.0 BACKGROUND

In the vicinity of Pier 6, both the pier and bulkhead areas are used to load and unload barges and tankers with various petroleum products. Geraghty and Miller (1993) indicate that several in-facility pipelines run from Pier 6 to various tank fields. The Pier 6 area has been a marine terminal since the early 1900s.

DRAI (1993) reported that historically, petroleum seepage into the Bay was observed along the bulkhead area during the early 1970s. NAPL has been detected since at least 1980 in some of the Pier 6 area wells. A historical (non-functioning) NAPL recovery piping, exists in the Pier 6 area. It is reported that in the late 1970's and early 1980's, as much as 500,000 gallons of NAPL was recovered from the subsurface. The source of the NAPL is not known and, based on anecdotal communications, appears to be related to "historical spills".

2.1 Bulkhead Construction

The Pier 6 area bulkheads were inspected by DRAI and Exxon personnel in August 1994 at low tide in order to view the bulkhead construction and to look for NAPL seeps. The construction details in Figure 2 are based on limited Exxon drawings, discussions with Exxon contractors and observations made during the boat inspection. Pertinent Exxon drawings are provided in Appendix A: A-1 and A-2.

During the August 1994 inspection, in the vicinity of well EBR20, a small, localized petroleum sheen from a joint in the concrete bulkhead was observed (Figure 2).

2.2 Geology and Hydrogeology

Based on Weston (1980) and Geraghty and Miller (1994) soil boring and well logs, a surficial silt, sand and cinder fill at least 20 to approximately 45 feet thick is present in the Pier 6 area (Figure 3). A 2-foot thick organic clay layer is found within the fill, with a reddish-brown till beneath the fill.

An unconfined ground water zone is present within the fill. Ground water is generally encountered between 5 and 10 feet below grade (ft-bg) and is influenced by tidal fluctuations in the Bay. The hydraulic gradient slopes easterly, towards the Bay during low tide; during high tide, the hydraulic gradient slopes landward, westerly (Figures 4 and 5). Overall, the ground water flow is towards the Bay, but brackish water is present in the vicinity of the bulkheads.

3.0 FIELD INVESTIGATION

The following field work was conducted by DRAI during 1994 and 1995.

3.1 Monitoring and Recovery Wells

Twenty-two wells and a tidal gauging station (TGS) in the Bay were used to measure ground water/NAPL levels and thicknesses within the Pier 6 area (Figure 2, Table I). All available well logs are provided in Appendix B. Five monitoring wells (EB71 through EB74 and EB85) were probably installed in the 1970s and 1980s. Monitoring wells PESTB3I and PESTB3D were completed by Geraghty and Miller in 1994. Fifteen recovery wells (EBR12 through EBR21, EBR23, EB70, EB86, Sheri 1 and Sheri 2) were probably installed in the 1960s and 1970s. In 1980, wells EBR12, EBR13, EBR14 and EBR16 were redrilled and the screens were replaced with PVC screens. Well construction details of Sheri wells 1 and 2 are provided along with proposed closure specifications in Appendix B. At the time of the field investigation, wells EB70 and EB86 were partially filled in with soil, and well EBR20 could not be located. Well construction details are based on DRAI field measurements, except for wells PESTB3I and PESTB3D.

3.1.1 Well Integrity Evaluation and Modifications

Beginning in August 1994, the Pier 6 area wells (with the exception of wells PESTB3I and PESTB3D) were evaluated to determine their integrity and were modified as necessary in order to measure ground water/NAPL levels during the investigation. Well dimensions were determined by field measurements. The total depth was measured using an interface probe and the screened interval was measured using a rod with sharpened nails protruding from the tip. On six wells (wells EBR12, EBR13, EBR14, EBR16, EBR18 and EBR19), the modifications included installation of well covers.

Five monitoring wells (wells EB71 through EB74 and EB85) were developed to remove sediments from the wells and screens. The development included: (1) well purging with a vacuum truck to remove sediments from the well bottoms; (2) jetting the well screen with either a high pressure hose or firehose; and (3) a second period of well purging with a vacuum truck. The total development time for each well was approximately one-half hour. The recovery wells were not developed, since the development of recovery wells at other locations in the Bayonne Plant resulted in the gravel pack being drawn into the well.

3.1.2 Existing NAPL Recovery System

An existing (but currently non-functioning) NAPL recovery system in the Pier 6 area consists of nine recovery wells (EBR12 through EBR18, EBR21 and EBR23), a network of discharge pipes and pumps. This recovery system was probably installed in the 1970s. In 1992, the discharge lines were modified and connected by a 4-inch PVC pipe to the East-Side Treatment Plant (Appendix A: A-3 and A-4). Electricity and pumps are located at many of the well heads.

3.2 NAPL Sampling

In order to evaluate the potential NAPL source(s) and characteristics, NAPL samples were collected for analysis from wells EBR12, EBR18 and EB72 in November 1994.

The NAPL samples were collected with dedicated teflon bailers; no purging was conducted prior to sampling. All samples were analyzed by Compuchem Environmental Corporation in Research Triangle Park, North Carolina. Sampling parameters included volatile organic compounds plus 15 additional peaks (VOCs+15), base neutral compounds plus 15 additional peaks (BNs+15); and total petroleum hydrocarbons (TPH) by gas chromatograph (GC) based on gasoline and diesel standards, specific gravity and viscosity. Specific gravity and viscosity data are provided in Appendix C. The VOC and BN data have currently not been validated and are not necessary for evaluating the IRM requirements. Therefore, these data are not included in this report, but will be validated and submitted at a later date.

The NAPL in the Pier 6 area wells is a brown petroleum product. Analytical results are summarized in Table II. The average specific gravity was 0.85, and the kinematic viscosity ranged from 3 to 248 centistoke.

3.3 NAPL Occurrence

Two complete rounds of fluid level measurements and apparent NAPL thicknesses were obtained at low and high tide on June 9 and 8, 1995, respectively (Figures 6 and 7; and Tables in Appendix D:D-1). NAPL was detected in seven out of seventeen Pier 6 area wells measured. When present, the apparent NAPL thicknesses were typically less than 0.25 foot. In June 1995, two localized areas of NAPL thicknesses in excess of 0.25 foot were observed: one in the vicinity of wells EB72 and EB73 (0.7 to 1.9 foot) and the second in the vicinity of well EBR12 (1.4 foot).

As discussed in Section 2.1, a small, localized petroleum sheen was observed near the bulkhead in the vicinity of well EBR20 (Figure 2). Over the duration of the field investigation conducted between 1994 and 1995, this was the only sheen observed by DRAI.

3.4 Tidal Investigation

In October 1994, a tidal investigation was completed to evaluate the fluid fluctuations within the wells and the possible NAPL migration. Fluid level measurements obtained in October were supplemented by subsequent measurements. In June 1995, specific conductivity (conductivity) measurements were obtained at selected wells in order to evaluate salinity within the unconfined ground water zone. A summary of ground water/NAPL levels is provided in Appendix D:D-1.

3.4.1 Field Procedures

During the tidal investigation, fluid levels in select Pier 6 area wells and the TGS were measured over a 12-hour period. Fluid levels were manually collected with an interface probe and with automatic data recorders (ADRs). The ADRs were two In-Situ Hermits (models 1000 and 2000) and Unidata portable data loggers; the ADRs utilize pressure transducers to measure total head. NAPL and water level measurements obtained with an oil-water interface probe were used to determine NAPL thicknesses.

Conductivity measurements were obtained in the field from ground water samples collected in the upper five-foot interval of standing water within the wells and at the TGS with a

Yellow Springs Instrument (YSI) Model 33 conductivity meter. Ground water samples were collected with a teflon bailer.

3.4.2 Results

Fluid levels measured during the tidal investigation are summarized in Table III and in hydrographs presented in Figure 8. During the investigation, the Bay fluid level ranged from approximately -0.4 to seven feet mean sea level (msl) over a tidal cycle. Over a cycle, fluid levels within the wells generally varied from no discernible tidal effect (well EBR15) to over 4 feet (well EBR19).

Conductivity values are presented in Figure 9. Conductivity in the Bay was 31,000 micromhos/centimeter² (umhos/cm²) while the conductivity measured in the wells ranged from 21 to 25,100 umhos/cm². Brackish water exists (greater than 1,000 umhos/cm²) in wells 100 feet from the Bay.

3.5 Pumping Tests

In October 1995, step- and high-volume pumping tests were conducted on well EBR12 in order to evaluate aquifer characteristics.

3.5.1 Field Procedures

A trailer-mounted centrifugal pump was used to complete both tests. Water and NAPL pumped during the tests were discharged into the East-Side Treatment Plant. Continuous fluid level measurements were recorded at eight wells (EBR12 through EBR16, EBR18, EBR19 and EB71) and the TGS by ADRs. Supplemental fluid level measurements were obtained with an interface probe in order to determine NAPL thicknesses.

3.5.2 Results

Fluid levels measured during the pumping tests are presented in Figure 8 and provided in Appendix C:C-1. The step pumping test results indicate that well EBR12 would sustain a pumping rate of 70 gallons per minute (gpm). A ten-hour pumping test was completed at an average rate of 70 gpm. Six feet of drawdown was observed in well EBR12 within the first 15 minutes of the pumping test (Figure 8). Drawdowns of 0.34 and 0.04 foot, were detected in wells EBR13 and EBR14 which are respectively located 30 and 80 feet from well EBR12. This drawdown is not adjusted for tidal fluctuations within these observations wells.

Based on the 6 feet of drawdown at a rate of 70 gpm, the specific capacity and theoretical transmissivity at well EBR12 was determined. The specific capacity is 12 gpm/foot. The formula: Q/s=T/1500; where, s = drawdown, Q = pumping rate, T = transmissivity (Driscoll, 1986) was used to calculate the theoretical aquifer transmissivity for an unconfined pumping well. The theoretical transmissivity is 17,500 gallons per day/foot (gpd/ft).

3.6 NAPL Recovery Tests

In June 1995, a series of short-term NAPL recovery tests was completed on wells EBR12, EBR18 and EB73 in order to evaluate the feasibility of NAPL recovery. The tests included skimming only NAPL for a period of at least 24 hours. Dual pumping (water and NAPL pumping with separate pumps) was also performed at wells EBR12 and EBR18. Dual

pumping at well EB73 was not feasible because there was insufficient water. The results of the NAPL recovery tests are summarized on Table VI.

During NAPL skimming alone (no ground water depression), the sustainable NAPL pumping rate was less than 0.01 gpm. There was no significant increase in NAPL recovery by pumping ground water with NAPL.

4.0 SUMMARY OF CONCLUSIONS

The following summary is based on field observations, water level and NAPL thickness measurements, NAPL sampling results, pumping tests and NAPL recovery tests.

(1) The floating NAPL detected in the monitoring wells is present in an unconfined ground water zone located within the fill.

The Pier 6 area is underlain by approximately 40 feet of silt, sand and cinder fill. Ground water occurs between 5 and 10 ft-bg and is influenced by tidal fluctuations. Based on a tidal investigation, the hydraulic gradient is towards the Bay (easterly) during low tide and landward (westerly) during high tide; specific conductivity data indicate that brackish water generally extends 100 feet landward from the Bay.

(2) The fill unit is very permeable; however, NAPL recovery from the fill is limited.

Based on the pumping test results from well EBR12, the fill is very permeable (transmissivity value of approximately 17,500 gpd/ft). Well EBR12 was pumped at a sustainable rate of 72 gpm (for 10 hours) with a specific capacity of 12 gpm/ft. Based on NAPL recovery tests completed at wells EBR12, EBR18 and EB73, NAPL skimming from these wells is not feasible. There was no significant increase in NAPL recovery by pumping total fluids.

NAPL recovery during high volume pumping is limited by the preferential flow of water versus NAPL. This dilution effect makes high rate NAPL recovery extremely inefficient. Additionally, the effect of sustained high volume total fluids pumping will result in significant drawdown where the NAPL will likely adhere to the fill matrix.

(3) NAPL greater than 1 foot thick is detected in two areas.

A total of 7 out of 17 wells contained detectable amounts of NAPL. With the exception of 4 wells (wells EB72, EB73, EBR12 and EBR18), NAPL thicknesses were typically less than 0.25 foot. The presence of NAPL can be divided into the following two areas: (1) the vicinity of wells EBR17 (0.04 ft), EBR18 (0.22 ft), EB72 (0.68 ft), EB73 (1.41 ft) and EB74 (0.08 ft); and (2) the vicinity of wells EBR12 (1.35 ft), EBR13 (0.01 ft) and EB71 (0.02 ft). At the other Pier 6 area wells, NAPL thicknesses/have remained relatively constant.

(4) An existing inactive NAPL recovery system could be activated in the Pier 6 area.

An existing NAPL recovery system at the Pier 6 area consists of 9 inactive recovery wells (the pumps are not in place), a network of discharge pipes from the well head and electricity. The discharge lines extend from wells EBR12, EBR13, EBR15, EBR16, EBR17, EBR18, EBR21 and EBR23 to the East-Side Treatment Plant.

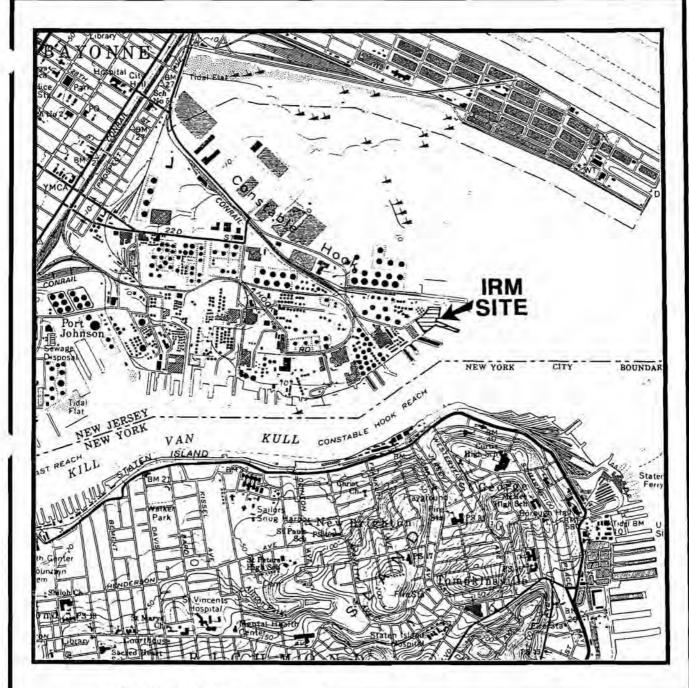
5.0 RECOMMENDATIONS

The following recommendations are intended to reduce the amount of NAPL in the Pier 6 area. These recommendations are based on the results of this IRM investigation.

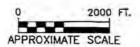
- (1) Upgrade and reactivate the existing NAPL recovery system. The upgraded recovery system should include three pumping centers at wells EBR12, EBR18 and the proposed replacement well for well EB73. The pumps will be designed for NAPL and ground water pumping to establish localized gradients in the areas of the thickest NAPL accumulations. The total fluids will likely be intermittently pumped during a portion of the tidal cycle in order to recover NAPL effectively but minimize the amount of total fluids pumped. The construction details will be determined (pump intake elevations, flow rates, cycle time) after the pumps are installed in the wells and testing is performed.
- (2) Install one recovery well to replace existing well EB73 because it is too shallow. The well should be approximately 25 feet deep and screened across the water table during both low and high tide. The well should be installed in accordance with NJDEP protocols.
- (3) Wells Sheri 1, Sheri 2, EBR17, EB70, EB73 and EB86 should be sealed in accordance with NJDEP protocols. The wells have either been destroyed, or fluid levels do not respond to tidal conditions.
- (4) Fluid level elevations and NAPL thickness should be measured in all of the Pier 6 area wells on a quarterly schedule in order to evaluate NAPL recovery.

6.0 REFERENCES

- (1) Dan Raviv Associates, Inc., January 1993, Non-Aqueous Phase Liquids (NAPLs) Interim Remedial Measures Work Plan - Exxon Company U.S.A. - Exxon Bayonne Plant, Bayonne, New Jersey.
- (2) Dan Raviv Associates, Inc., June 1994, Addendum to Non-Aqueous Phase Liquid Interim Remedial Measures (IRM) Work Plan - Exxon Company U.S.A. -Exxon Bayonne Plant, Bayonne, New Jersey.
- (3) Driscoll, Fletcher G., 1986, Groundwater and Wells, Johnson Division.
- (4) Geraghty & Miller, Inc., January 1993, Site History of the Exxon Company U.S.A., Bayonne Plant, Bayonne, New Jersey.
- (5) Geraghty & Miller, Inc., 1994, Well and Soil Boring Logs.
- (6) Roy F. Weston, 1980, Well Logs.



JERSEY CITY QUADRANGLE 7.5 MINUTE SERIES PHOTOREVISED 1981







SITE LOCATION

PIER 6 IRM BAYONNE PLANT - BAYONNE, NEW JERSEY

PREPARED BY:TBW/ODL DATE: JULY 1995

JOB NO.: 94C1370 FIGURE: 1



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Consultants in hydrogeology, water quality, landfill hydrology and ECRA compliance

CASE NO. 90-02-22-1055

DISCHARGE INVESTIGATION AND CORRECTIVE ACTION REPORT FOR EXXON CHEMICAL AMERICAS BAYONNE PLANT BAYONNE, NEW JERSEY

DRAI Job No. 90C817

prepared for:

Exxon Chemical Americas
Bayonne Plant
Bayonne, New Jersey 07002

Attention: Mr. Luis Betancourth Ecology Coordinator

prepared by:

Dan Raviv Associates, Inc. 57 East Willow Street Millburn, New Jersey 07041

December 28, 1990

TABLE OF CONTENTS

Section No.	Title	Page No.	
1.0	INTRODUCTION	1	
2.0	SITE CHARACTERIZATION	2	
3.0	DRAI FIELD INVESTIGATION 3.1 Monitoring Well Installation 3.2 Ground Water Sampling and Analysis	3	
4.0	GEOLOGY	4	
5.0	GROUND WATER SAMPLING RESULTS	5	
6.0	SUMMARY OF CONCLUSIONS	6	

LIST OF FIGURES

Figure No.	Title
1	Location Map
2	Site Plan, Monitoring Well Locations and Ground Water Analytical Results
3	Stratigraphic Section of the Hoboken Channel in Bayonne, New Jersey

LIST OF TABLES

Table No.	Title
1	Summary of Soil Analysis Post-Excavation Sampling
11	Summary of Ground Water Analyses

LIST OF APPENDICES

Appendix	Title
A	Well Completion Logs
В	Monitoring Well Certification Forms
C	Ground Water Sampling Protocol
D	Analytical Data Package Soil Data,
. Е	Ground Water Data Well Search (To be submitted under seperate cover at a later date)

CASE NO. 90-02-22-1055
DISCHARGE INVESTIGATION AND
CORRECTIVE ACTION REPORT FOR
EXXON CHEMICAL AMERICAS
BAYONNE PLANT
BAYONNE, NEW JERSEY

1.0 INTRODUCTION

D

A.

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On behalf of Exxon Chemical Americas (ECA) and in accordance with the New Jersey Department of Environmental Protection (NJDEP) letter dated July 12, 1990, Dan Raviv Associates, Inc. (DRAI) has prepared this Discharge Investigation and Corrective Action Report (DICAR) summarizing hydrogeologic conditions at the ECA facility in Bayonne, New Jersey (Figure 1). The purposes of the investigation were to: (1) determine the hydrogeologic properties of the subsurface, and (2) investigate the impact a of potential on-site discharge from the collection sump. All DRAI activities were conducted according to the NJDEP Bureau of Underground Storage Tanks (BUST) Scope of Work dated September 1989.

On February 22, 1990, a possible discharge was noted during the decommissioning of an 825 gallon capacity, concrete collection sump, which was used to collect lubricating oil additives and automatic transmission fluid spillage resulting from drum filling operations at the ECA Facility.

Two monitoring wells were installed by DRAI to investigate the potential impact of potential discharges from the sump. The well locations were selected based on estimated ground water flow direction and proximity to the UGST. A partial site plan showing the well locations is presented on Figure 2.

2.0 SITE CHARACTERIZATION

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The ECA facility is located on Constable Hook in Bayonne, New Jersey. Constable Hook is a highly industrialized area. The ECA facility manufactures lubricating oil additives and automatic transmission fluids. Inside the chemical plant warehouse, shown on Figure 2, 55-gallon drums were filled with lubricating oils and transmission fluids. Any spillage resulting from these operations was collected in floor drains which lead outside to a concrete collecting sump along the eastern wall of the warehouse. The sump was reportedly emptied regularly (once per week) using a vacuum truck. ECA determined that the concrete sump was no longer necessary and that spillage could be collected directly from the floor drain inside the warehouse.

On February 22, 1990, during the decommissioning of the concrete storage sump, a potential discharge was visually observed. As a result, ECA notified the NJDEP hotline of a potential release. At the time of closure, the sump was cleaned and removed by Furino and Son, Inc. (Furino) of Plainfield, New Jersey. These activities were supervised by Sirco Associates (SIRCO) on behalf of ECA. On April 17, 1990, approximately 18.4 tons of contaminated soil associated with the sump, was excavated, removed, and transported to Cecos International, Inc. of Niagara Falls, New York. The waste soil was classified as X-725. The excavation was then backfilled by Furino with clean, virgin material and covered with concrete. The drain which lead from inside the warehouse to the sump was also sealed during this time.

Three post-excavation soil samples were collected in the sump excavation by Sirco and sent to International Hydronics Corporation, Rocky Hill, New Jersey on March 12, 1990 for analysis. The samples were analyzed for semivolatile compounds and petroleum hydrocarbons (PHCs). A summary of the analytical results is presented in Table I.

In a letter dated July 12, 1990, the NJDEP required Exxon to complete an investigation in accordance with BUST guidelines and upon completion to submit a DICAR. DRAI was retained by ECA to conduct the required investigation leading to the preparation and submittal of this DICAR.

3.0 DRAI FIELD INVESTIGATION

3.1 Monitoring Well Installation

As part of its investigation, DRAI installed two ground water monitoring wells on October 3, 1990. The wells were installed by a New Jersey-licensed well driller and in accordance with NJDEP-approved protocols. One well (MWI) was located within 10 feet of the sump and completed to 17 feet below grade to monitor the potential ground water quality impact of the sump. The second well (MW2) was located approximately 15 feet from the sump and in an assumed background position. Ground water flow direction is based on topography and local drainage patterns. MW2 was also completed to 17 feet below grade. DRAI believes that ground water flows in a southeasterly direction from the site towards the Kill Van Kull. Both wells were screened across the water table. wells were installed to investigate the potential impact of the discharge on ground water quality. During well installation, oil saturated mud was encountered at a depth of approximately 14 feet below grade in both wells. Concrete was encountered in both borings during drilling from 1.5-14.0 feet below grade. A summary of the boring lithology and well completion data are presented as Appendix A. Well certification forms A and B are presented as Appendix B. It should also be noted that Level C Health and Safety Protection Equipment was used during well installation. HNU readings adjacent to the open borehole were approximately 100 parts per million (ppm). Mr. David Rubin and Mr. Douglas Burry of the NJDEP/BUST were on-site to observe well installations and field conditions.

3.2 Ground Water Sampling and Analysis

On October 29, 1990, DRAI collected the first round of ground water quality samples. Prior to collecting ground water samples, an oil/water interface probe was lowered into each well. MWl contained approximately 1.0 feet of oil on the water column. The top of the oil surface was at a depth of 6.7 feet below the top of the PVC casing. MW2 contained approximately 1.1 feet of oil on the water column. The top of the oil surface was at a depth of 6.65 feet below the top of the PVC casing. Due to the thickness of the floating product, a vacuum truck was used to skim the oil off the water surface prior to the purging of three volumes of water from each well. After purging, a dedicated Teflon bailer was lowered into each well and brought to the surface. The ground water sample was then collected from the bottom of each bailer (Appendix C). This facilitated the collection of a product-free water quality sample.

The samples were sent, under chain of custody, to York Laboratories, a New Jersey-certified laboratory and analyzed for volatile organic compounds plus 15 (VOC+15), base neutral compounds plus 15 (B/N+15), petroleum hydrocarbons (PHC) and selected metals (copper, magnesium, cadmium, and zinc). A summary of the analytical results is presented in Table II.

4.0 GEOLOGY

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The geology of the Bayonne area consists of two distinct zones. The first zone, northwest of the ECA site (Constable Hook), consists of Pleistocene-age sands, gravels, and boulders (till) overlying the thick, Triassic-age Palisades diabase. This area has maximum elevations of approximately 50 feet above sea level. The second zone, which underlies the ECA site and continues southeasterly to the Hudson Estuary, is part of the Hoboken Channel deposits. This unit consists of surficial fill material overlying a sequence of organic silts and clays (Holocene), glaciofluvial outwash sands (Pleistocene), and red shales and sandstones of the Stockton Formation (Triassic). A general stratigraphic cross-section through the study area(1) is presented in Figure 4. The wells installed by DRAI at the ECA facility penetrated into the surficial fill material.

Lovegreen, J. R., 1974. Paleodrainage History of the Hudson Estuary, Master's Thesis, Department of Geology, Columbia University.

5.0 GROUND WATER SAMPLING

Ground water sampling was conducted on October 29, 1990. The samples were analyzed for VOC+15 (calibrated for xylene), B/N+15, PHC and selected metals. The targetted VOC analysis revealed that MW1 and MW2 contained elevated levels of methylene chloride, benzene, toluene and chlorobenzene. Benzene and toluene were also detected in the trip blank but at estimated levels of 1J and 4J parts per billion (ppb), respectively. No non-targetted VOCs were detected in either well.

The B/N analysis revealed that MWl and MW2 contained elevated levels of 1,2-dichlorobenzene, 1,4 dichlorobenzene, 1,3-dichlorobenzene, napthalene, phenanthrene, and bis(2-ethyl hexyl) phthalate. Additionally, MW2 contained estimated levels of fluoranthene and pyrene at concentrations of LJ and 2J ppb, respectively. The non-targetted B/N analysis revealed elevated levels of several non-targetted compounds in both wells. A summary of the analytical results is contained in Table II and a complete data package including QA/QC is presented in Appendix D

The PHC analysis revealed detectable concentrations in both MW1 and MW2, at 92 and 120 ppm respectively.

6.0 SUMMARY OF CONCLUSIONS

DRAI installed two ground water monitoring wells adjacent to the location of the former concrete sump. The sump was used to collect lubricating oil and transmission fluid spillage which drained from the drum filling area inside the chemical plant warehouse. The material collected in the sump was reportedly removed once a week with a vacuum truck. ECA determined that the sump was no longer necessary and on February 22, 1990, the sump was removed and the drain sealed. Upon excavation, contaminated soils were observed and a discharge reported to the NJDEP. Approximately 18.4 tons of contaminated soil were excavated and removed to a secure off-site facility. The excavation was backfilled with clean material and covered with concrete. DRAI was then retained to conduct the hydrogeologic investigation leading to the submission of this DICAR as required in the NJDEP letter dated July 12, 1990.

As part of its investigation, DRAI installed two monitoring wells and collected ground water samples for laboratory analyses. At the time of sampling, October 29, 1990, DRAI measured approximately 1-foot of floating product in each well. Exxon has and will continue to periodically check the two monitoring wells for free product. If detected, free product will be removed. According to ECA, the chemical plant warehouse and other nearby buildings do not have basements. A sewer line (shown on Figure 2) running near the former sump was checked for the presence of floating product. This sewer line is part of ECAs stormwater collection system. No product was observed in the sewer line.

Samples of the ground water were collected and analyzed. The VOC analysis revealed elevated levels of methylene chloride, benzene, toluene and chlorobenzene. No non-targetted VOCs were detected.

The B/N analytical results revealed elevated levels of 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, napthalene, bis (2-ethylhexyl phthalate) and several non-targetted compounds.

FIGURES

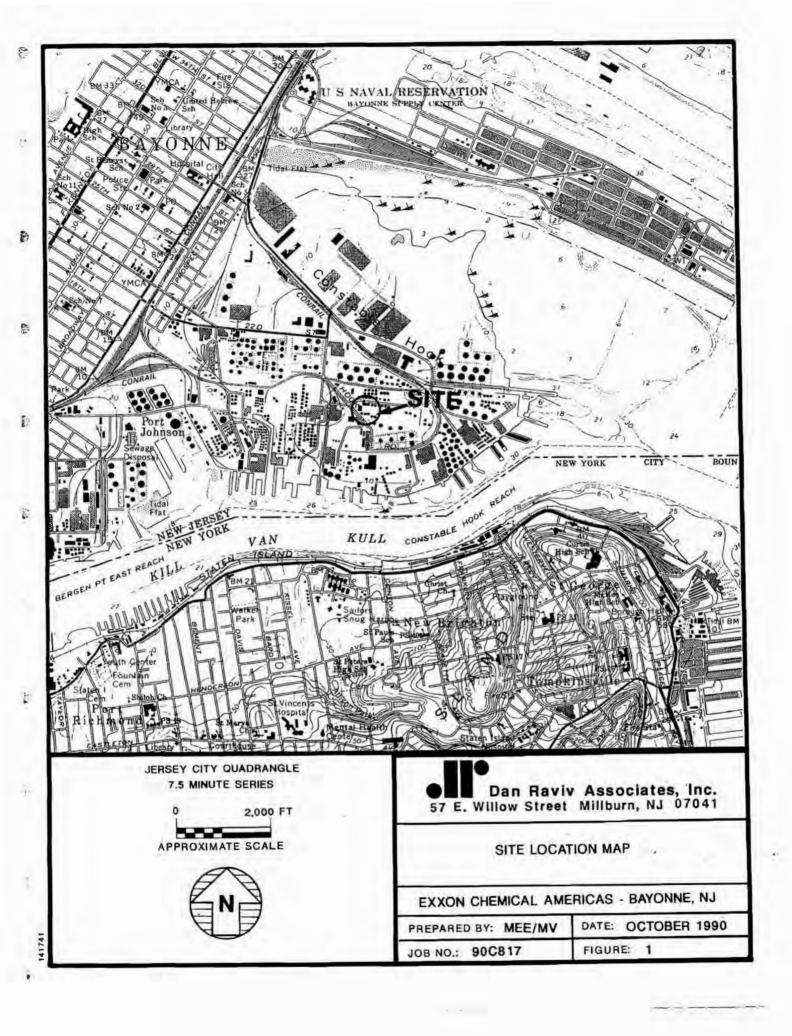


Table I Summary of Soil Analyses Post-Excavation Sampling Exxon Chemical Americas Bayonne, New Jersey

Sample No. Sample Date Matrix	North Side 3/12/90 Soil	South Side 3/12/90 Soil	East Side 3/12/90 Soil	
Parameter				
Petroleum Hydrocarbons (ppm)	31,000	21,300	43,700	
Semi-volatile Extractable Organics (ppb)				
Napthalene	ND	800 (J)	ND	
Pyrene	ND	1,000 (J)	ND	
Bis(2-Ethylhexyl) phthalate	ND	2,200 (J)	ND	
N-Nitroso-di-n-propylamine	ND	ND	6,500 (J)	
Di-N-octylphthalate	ND	ND	2,200 (J)	
Total semi-volatile	5.	50 4545 3.2	and form the Areas	
extractable organics (ppb)	ND	4,000 (J)	8,700 (J)	

Notes: 1) ND = Not-detected

- 2) (J) = indicates an estimated value below the minimum detection limit (MDL)
- 3) ppm = parts per million 4) ppb = parts per billion
- 5) Petroleum hydrocarbons were analyzed by method 418.1
- 6) Semi-volatile extractable compounds were analyzed by method 8270
- 7) Post-excavation soil data collected by Sirco Associates.

Dan Raviv Associates, Inc. Job No.90C817

Table II Summary of Ground Water Analyses Exxon Chemical Americas Eayonne, New Jersey

Sample No. Lab No.	MW1 10211001	1	MW2 0211002	1	TB 0211003	
Sample Date	10/29/90	1	0/29/90	1	0/29/90	
PARAMETER		-				
Targetted VOCs (ppb)						
Methylene Chloride	2,500	(J)	3,900		ND	
Benzene	1,600	(J)	1,100		1	(J)
Toluene		(J)		(J)	4	(J)
Chlorobenzene	33,000		23,000		ND	
Total Targetted VOCs (ppb)	37,760		28,590			(J)
	********	(ADD)				
Targetted B/Ns (ppb)						
1,3-dichlorobenzene	110		33		NA	
1,4-dichlorobenzene	540		220		1	
1,2-dichlorobenzene	26,000		4,000		1	
Napthalene	580		225		1	
Phenanthrene	2	(J)	6	(J)	1	
Fluoranthene	ND			(J)	1	
Pyrene	ND		2	(J)	1	
Bis(2-ethyl hexyl)Phthalate	4	(J)	22		NA	
Total Targetted B/Ns (ppb)	27,236		4,509		NA	
Non-Targetted B/Ns (ppb)						
Unknown Phthalate Ester	797		ND		NÁ	
Unknown Alkane	668		1,448			
Unknown	216		ND		1	
Methyl-Napthalene Isomer	ND		150		1	
Tetramethyl-Benzene Isomer			420		1	
Unknown PAH	1		100		4	
Unknown Cycloalkane	3		95		- 1	
Unknown Aromatic	ND		190		NA	
Total Non-Targetted B/Ns (ppb)	1,681		2,403	à l	NA	
Total Targetted and			Le Ses			
Non-Targetted B/Ns (ppb)	28,917		6,912		NA	

Notes: 1) ND = Not-detected

- 2) NA = Not analyzed
- 3) (J) = indicates an estimated value below minimum detection limit.
- 4) ppb = parts per billion.
- 5) ppm = parts per million.
- 6) VOC = volatile organic compound.
- 7) B/N = base neutral compound.
- 8) No non-targetted VOCs were detected in the VOC analyses.
- 9) TB = Trip Blank

Dan Raviv Associates, Inc. Job No. 90C817

15

Table II (cont'd) Summary of Ground Water Analyses Exxon Chemical Americas Bayonne, New Jersey

Sample No.	MW1	MW2
Lab No.	10211001	10211002
Sample Date	10/29/90	10/29/90
PARAMETER		
Petroleum Hydrocabons (ppm)	92	120
Metals (ppb)		
Cadmium	<5.0	<5.0
Copper	<25.0	<25.0
Magnesium	38,600	33,000
Zinc	167	626

Notes:

8

Dan Raviv Associates, Job No. 90C817

⁽¹⁾ ppb = parts per billion.

⁽²⁾ ppm = parts per million.

EXON COMPANY, U.S.A.

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November 17, 1992

Submittal of Confirmation of Notification of Discharge Event Pursuant to N.J.A.C. 7:1E-5.8

Bureau of Discharge Prevention New Jersey Department of Environmental Protection and Energy 401 East State Street CN 027

Trenton, New Jersey 08625-0027

ATTENTION: Discharge Confirmation Report

Dear Sir or Madam:

As required by N.J.A.C. 7:1E-5.8, the following information is being reported by Exxon Company, U.S.A. in order to confirm a discharge event (Case # 92-10-23-0935-54) that occurred at Exxon's Bayonne Fuels Terminal in Bayonne, New Jersey on October 23, 1992.

- 1.) Name of Individual Making Discharge Notification
 Peter Rice
 Exxon Company, U.S.A.
 Bayonne Fuels Terminal
 250 East 22nd Street
 Bayonne, New Jersey 07002
 (201) 858-6800
- 2.) Name of Individual Submitting Confirmation Report
 Robin A. Callaghan
 Exxon Company, U.S.A.
 Bayway Refinery
 1400 Park Avenue
 Linden, New Jersey 07036
 (908) 474-3764
- 3.) Name of Person Responsible for Discharge
 Exxon Company, U.S.A.
 Bayonne Fuels Terminal
 250 East 22nd Street
 Bayonne, New Jersey 07002
 (201)858-6800

& DIVISION OF EXXON CORPORATION

-2-November 17, 1992 Submittal of Confirmation of Notification of Discharge Event Pursuant to N.J.A.C. 7:1E-5.8

4.) Name of Facility Owner/Operator Exxon Company, U.S.A. Bayonne Fuels Terminal 250 East 22nd Street Bayonne, New Jersey 07002

Source of the Discharge A pinhole leak was discovered on the Isopar G line near the railcar manifold area.

6.) Location of the Discharge The approximate location of the discharge is shown on the attached site map (Attachment 1).

Site Name: Site Address: Exxon Company, U.S.A. Bayonne Fuels Terminal 250 East 22nd Street Bayonne, NJ 07002

Tax Lot and Block:

Lot #1 Block 419

Municipality:

Bayonne, NJ

County:

Hudson

Dept./EPA id Numbers: USEPA ID # NJT350011144

- Name (s) of Hazardous Substance (s) Discharged The hazardous substance discharged was Isopar G, a Synthetic Isoparaffinic Hydrocarbon with Chemical Abstract Service (CAS) number 64742-48-9.
- Estimate of Hazardous Substance (s) Discharged Approximately three to five gallons of Isopar G was discharged to the ground.
- 9.) Date and Time of Discharge

	Date	Time
Discharge Began	Unknown	
Discharge Discovered	10/23/92	9:20 AM
Discharge Ended	10/23/92	9:25 AM
NJDEPE Notified	10/23/92	9:33 AM

10.) Actions Taken to Contain, Clean Up, and Remove Dischare A five gallon pail was immediately placed under the line to stop the discharge. The 2 inch line was then isolated, drained, epoxy patched and clamped. All impacted soil and gravel was removed. The cleanup and containment costs associated with this incident were within normal clean up expenses.

November 17, 1992 Submittal of Confirmation of Notification of Discharge Event Pursuant to N.J.A.C. 7:1E-5.8

- 11.) Corrective Actions and/or Countermeasures Taken
 The line remains out of service.
- 12.) Additional Preventative Measures Taken No additional preventative measures have currently been taken as a result of this discharge incident.
- 13.) Entities Involved in Containment and Removal of Discharge
 Exxon Company, U.S.A. Furino and Sons
 Bayonne Fuels Terminal 767 North Avenue
 250 East 22nd Street Plainfield, New Jersey 07062
 Bayonne, New Jersey (908) 756-7736
 07036
 (908) 858-6800
- 14.) Sample Descriptions
 No samples have been taken at or around the site of the discharge. Therefore, a sample description is not applicable to this report.
- 15.) Sample Analysis Results
 No samples have been taken at or around the site of the discharge. Therefore, a summary of the sample analysis results is not applicable to this report.
- 16.) <u>Financial Responsibility Documentation</u>
 Documentation of financial responsibility will be developed as part of the site's DPCC plan. The documentation is not yet applicable for DPCC reporting requirements.
- 17.) Supplemental Information
 No additional information regarding this discharge event is required to supplement the information already contained in this report.
- 18.) Additional Information Requested by the NJDEPE
 No additional information regarding this discharge event has been requested by the NJDEPE.

November 17, 1992 Submittal of Confirmation of Notification of Discharge Event Pursuant to N.J.A.C. 7:1E-5.8

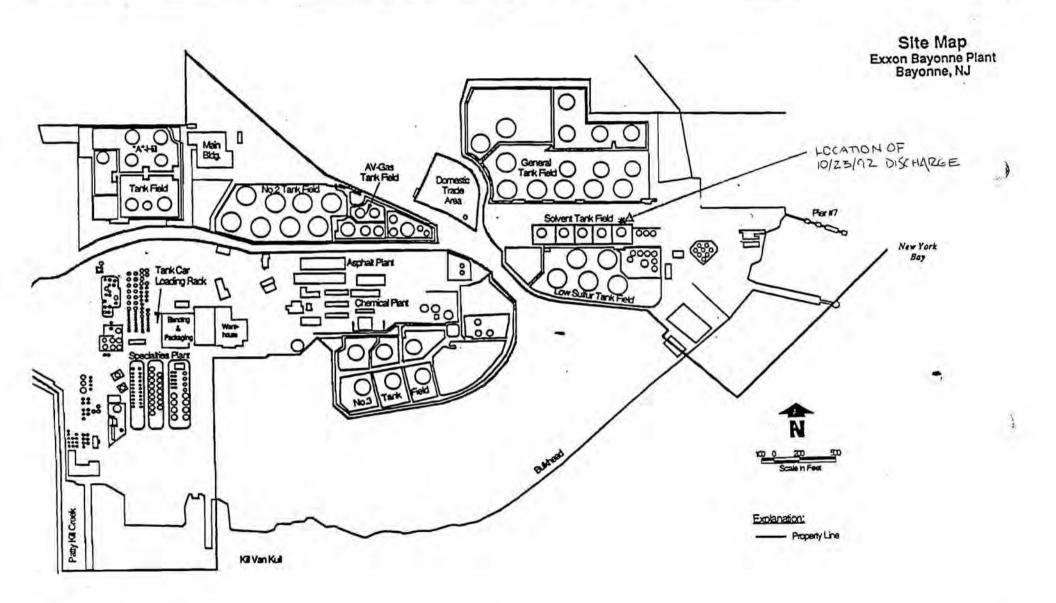
19.) Certification This written confirmation report is certified pursuant to N.J.A.C. 7:1E-4.11 and the certification is made subject to the statutory provisions of the NJSA 2C:28 - 3(a). of the limitations imposed by the manner in which information is collected and summarized, there is no one person who has direct knowledge of all the information used to prepare the report and who also has overall responsibility for all of the information contained in the report; however, based on the above and my review of the information transmitted in this report, I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant civil and criminal penalties, imprisonment, including fines and/or submitting false, inaccurate, or incomplete information.

Very Truly Yours,

- Thur bley for De Wiggins

C: Mr. David Oster Metro Bureau of Field Operations Division of Hazardous Waste Management New Jersey Department of Environmental Protection and Energy 2 Babcock Place West Orange, New Jersey 07052

> Furino & Sons 767 North Avenue Plainfield, New Jersey 07062



EXXON COMPANY, U.S.A. - SITE REMEDIATION TEAM

SEWER EVALUATION RESULTS ASSESSMENT - AS OF DECEMBER, 1994

FOR

BAYONNE PLANT SITE
BAYONNE, NEW JERSEY

Prépared by: David R. Chapman LACHEL & Associates, Inc. January, 1995

TABLE OF CONTENTS
Introduction and Background1
Definitions 2
Description of Bayonne Plant Sewer System
Current Sewer Evaluation Status
Sewer Evaluation Methodology5
Rationale for Assessing Significance of Sewer Findings 7
Summary of Results and Recommendations
Detailed Writeups
Main Trunk #111
Main Trunk.#215
Main Trunk #318
Main Trunk #4. 22
Main Trunk #5
Main Trunk #6
Tables

- Table 1 Sewer Inspection Results and Recommendations
- Table 2 Summary of Major Sewer Line Findings for Lines Videoed Through December 16, 1994

Table 3 - Sewer Cleaning Results for Former Exxon Chemicals Process Sewer

Figures

- Figure 1 Main Trunk Sewers and Areas
- Figure 2 Main Trunk #1 Sewer Piping Schematic
- Figure 3 Main Trunk #2 Sewer Piping Schematic
- Figure 4 Main Trunk #3 Sewer Piping Schematic
- Figure 5 Main Trunk #4 Sewer Piping Schematic
- Figure 6 Main Trunk #5 Sewer Piping Schematic
- Figure 7 Main Trunk #6 Sewer Piping Schematic

Appendix A - Exxon Chemicals Process Sewer Cleaning - Documentation and Results

EXXON COMPANY, U.S.A. - SITE REMEDIATION TEAM - BAYONNE PLANT SEWER EVALUATION RESULTS ASSESSMENT - AS OF DECEMBER, 1994

INTRODUCTION AND BACKGROUND

Exxon has conducted detailed evaluation studies for the sewer systems at the Bayonne Plant, in compliance with Paragraph 22 of the Site Remediation Administrative Consent Order (ACO) for the Bayonne Plant site, dated November 27, 1991. These studies include field location of sewer structures such as manholes and catch basins, and cleaning and videotaping of sewer lines. This report discusses some of the results of those studies, and related information such as results from groundwater monitoring and NAPL IRM's as they relate to characterizing the sewer system. The report describes the basis for the scope of additional recommended sewer characterization work and for recommending no further action in certain cases. This report deals with description of sewer piping in active use as part of the operating plant sewer systems. It is different from the report documenting the tankfield sewer evaluation at Bayway Refinery (September, 1994), in that results are available from large amounts of cleaning and videotaping efforts, whereas only the structure inspection phase had been completed at Bayway.

Following the signing of the ACO, considerable discussion and work relating to the large task of characterizing the sewers took place. The discussions and comments on draft work plans culminated in the submission of the Phase 1 Interim Remedial Measure Work Plan, Proposed Sewer Systems Evaluation dated February 10, 1993, having been prepared by IT Corporation. In a June 10. 1993 letter, the New Jersey Department of Environmental Protection and Energy (NJDEPE) approved the work plan subject to the conditions enumerated in that letter. On August 12, 1993, Exxon submitted a proposal to inspect ten percent of "laterals," following the pattern that had been established at the Linden Technology Center.

This proposal became the subject of considerable discussion, at least partially because of the great differences between the sewer systems for the two plant sites, including the differing plant areas, but more importantly, the extremely different service requirements and magnitude of the sewer systems. The availability of a significant amount of the results of inspection efforts to date afforded the opportunity to re-examine the question with a valuable data base to test the rationale for such proposals, as discussed herein.

As for the September, 1994 report on tankfield sewers at Bayway Refinery, this report discusses the factors of age, pipe size, pipe material or construction, present service, future intended use, flow, presence or absence of traffic over the piping, certainty

regarding the system layout, other related information such as NAPL IRM's and known contaminated areas, and availability of another regulatory mechanism to deal with overall site findings. This latter factor is best explored when the sewer evaluation results can be reviewed in conjunction with the findings of the Remedial Investigation (RI) report for the site and is not addressed herein.

Because large portions of the system have been inspected by cleaning and videotaping, the listing of percentages of piping in different size ranges and by different pipe materials was not performed for this report. This also means that the level of certainty regarding system layout is quite good. The age of the plant and multiple reconfigurations of the layout and construction means that the age of sewers is not well known, and that information related to previous layouts, such as possible traffic effects on sewers, may not be particularly meaningful.

This report includes:

- Definition of key sewer components as used herein.
- A description of the Bayonne Plant sewer systems and their operations, including the relationship of the various main trunk lines of the system.
- A description of the current status of the sewer system evaluation at the Bayonne Plant.
- A description of the evaluation methodology used in reaching the conclusions and recommendations documented herein.
- Rationale for assessing the significance of sewer findings from the cleaning and videotaping program.
- A summary of the results and recommendations for the various plant areas.
- o A detailed writeup for each of the six main trunk lines, documenting system operations information from operations personnel, system characteristics in the categories described above, major findings from the inspection program, and recommendations regarding the scope of additional inspections.

DEFINITIONS

Although an extensive list of definitions is not required, this section defines terms for various sewer system components as used herein. The following definitions for system components are adapted from those given in Exxon Engineering Standard 3.2.1-1a, June, 1991 revision, and are consistent with those expressed in civil engineering handbook chapters regarding sewers.

Mains - or main trunk lines - connect manholes and collect from two or more laterals, usually laid in streets below process areas. These are the largest pipes in the sewer system, conveying the greatest flow quantities, and are placed the deepest in the ground.

<u>Laterals</u> - sewers collecting from two or more sublaterals, and discharging to mains, nearly always at manholes. Most frequently contain one or more manholes.

<u>Sublaterals</u> - Sewer branches collecting flow from catch basins and discharging to laterals or mains. These are the smallest pipes in the system and any individual pipe may convey flow from a very small area.

<u>Catch basin</u> - A structure serving as an entry point for flow into a sewer from overland flow, generally having a metal grate or other form of open top, and typically located at low points of area paving or other areas from which stormwater flow must be collected. They also serve to trap sediment at the point nearest the source.

<u>Manhole</u> - A structure serving as a junction point for more than one sewer pipe, and as an access point for maintenance and inspection. They are not intended to gather overland flow and therefore they typically have a solid metal lid.

<u>Seal</u> - In refineries and other facilities handling flammable products, a hydraulic seal formed in a manhole or catch basin by constructing piping arrangements to prevent against vapor travel and ensure that a fire or explosion entering the structure from one pipe is not transmitted into another pipe and on through the system.

Of particular importance to this report are the definitions for the terms "lateral" and "sublateral." Please note that the term "lateral" is used somewhat differently than in previous discussions regarding inspection of ten percent of laterals at Bayonne. Previously, the term was used to refer to what this report calls "sublaterals." The use in this report is that which is commonly accepted in sanitary engineering, and it is consistent with the use of the term in the September, 1994 Tankfield Sewer Inspection Recommendation Report for the Bayway Refinery site. We believe this consistent application of this definition will help to clarify this issue. In assessing the classification of any particular pipe, factors considered included pipe diameter, its position in the overall system, and the size and nature of the area drained by the pipe. In other words, the significance of the pipe was considered as well as its position in the plan layout. The sublateral, therefore, is the class of pipe to which the proposal to evaluate ten percent, as approved in NJDEPE's June 10, 1993 letter approving the Phase I IRM Work Plan is applied herein.

DESCRIPTION OF BAYONNE PLANT SEWER SYSTEM

The continuous use of the Bayonne site for petroleum processing and storage operations since before 1870 has meant several generations of different types of facilities, in many cases built where the previous facility had been dismantled. This is certainly true of the sewers as well, with some sections probably being fairly old. It is known that sewers were added in the 1950's as part of a large modernization project, and the system substantially

reached its current configuration in the early 1970's as the primary service of the plant changed from refinery to oil storage terminal. The general history of the Bayonne Plant site is described in Geraghty and Miller's November, 1994 Site History report for the Bayonne Plant.

The current service of the system is primarily the conveyance of stormwater, although in the past, some portions of the system were process sewers. Steam condensate collection systems also empty into the sewer system. The system has also been used (and still is to a very limited extent) to convey pumpage of oily water from oil recovery wells on the site to the treatment plant for oil separation. The pumpage from a groundwater interceptor trench along the northern plant boundary also goes into the system. Tank water drawoffs would have gone into the system in the past, but play a very small part in the current operations of the plant. Exxon's current tank water drawoff practice is described in the section covering Main Trunk #1.

The system is divided into six trunk lines, which are major branches of the system. This is shown in Figure 4 from the IRM Work Plan, a copy of which is included in this report for reference. Main Trunk #1 is completely separate from the other branches. It currently serves the Lubes Plant, which is the portion of the plant retained by Exxon Company, U.S.A., after sale of a portion of the plant to International Matex Tank Terminals (I.M.T.T.). in 1993. A-Hill Tankfield, and the area around the main building formerly drained through Main Trunk #1, but a diversion has been constructed to route this flow eastward. Stormwater from Main Trunk #1 is treated at the West Side Treatment Plant which consists of gravity separation followed by DAF flotation. Treated Exxon stormwater is pumped to a point in Main Trunk #2 just north of the Avgas Tankfield, and continues through the system to the East Side Treatment Plant for final treatment by I.M.T.T.

The other five trunk lines together form one system which flows directly to the East Side Treatment Plant. Main Trunk #2 drains the No. 2 and Avgas Tankfields, collecting flow from Main Trunk #3 and joining with Main Trunk #5 at the beginning of Main Trunk #6. Main Trunk #3 serves the Asphalt and Chemical Plant Areas, collects flow from Main Trunk #4 (which serves the No. 3 Tankfield), and empties into Main Trunk #2. Main Trunk #5 serves the General Tankfield. Main trunk #6 serves the Low Sulfur and Solvent Tankfields and the Pier 6 and 7 and East Treatment Plant Area, as well as conveying flow from the other trunk lines to the treatment plant.

The approximate flow to the East Side Treatment Plant during normal plant operations not influenced by precipitation is about 350 gallons per minute (gpm). This includes about 100 gpm from the West Side Treatment Plant, as well as steam condensate and flow from the interceptor trench. It was estimated by former plant operations personnel that steam condensate flow for the entire plant could amount to 50 gpm or more. The flow from the interceptor trench varies from about 20 to 50 gpm, depending on occurrence of precipitation, with about 20 gpm as the base dry weather flow. It was also stated that

pumping capacity exists to pump up to 700 gpm from the West Side Treatment Plant into the mains in the east side of the plant if necessary to deal with storm flow conditions. The peak treatment capacity for the East Side Treatment Plant through the separator, sand filters, and carbon filters is 2100 gpm.

CURRENT SEWER EVALUATION STATUS

To date, major portions of work have been completed for Main Trunk Lines #1, #2, #4, and #6. The actual state of completion varies for the lines, but all have Interim Reports in various stages of preparation. In some cases, topographic surveying information remains to be completed to allow determination of pipe invert elevations. Work has not begun for Main Trunk #3 and only a small amount has been completed for Main Trunk #5, with no reporting available for either. Work has been terminated for the winter season as agreed and will resume in March, conditions and weather permitting. The details are described in subsequent sections of the report dealing with the various trunk lines.

At this time, virtually all of the footage of main trunk line piping is complete in the areas where work has been in progress for some time. The percentage of laterals inspected ranges, but is not complete at this time, as the whole effort was prioritized to work through much of the plant doing the mains first. As the work progressed, it was logical in many cases to follow through and inspect other system elements. Generally, it is planned to complete inspection of laterals, however, there are some specific sections described herein as potentially not requiring inspection based on rationale presented. For sublaterals, ten percent or more (generally significantly more) have been inspected, as was discussed with NJDEPE.

This report covers only sewers in active service. Inactive sewers will be dealt with in the site-wide studies being performed as part of the Remdial Investigation. Some inactive sewers are shown on existing drawings, and for these, footage totals are included in Table 1 of this report.

SEWER EVALUATION METHODOLOGY

The methodology used in evaluating the sewers at the Bayonne Plant in preparation of this report required the use of the following resources:

- o The Site History Report for the site prepared by Geraghty and Miller, Inc. and supporting background documents and historical maps.
- o Phase I Interim Remedial Measures Sewer Inspection Reports, prepared for each of the operational areas in the Bayonne Plant by IT Corporation. These were based on the mapping and verification effort carried out by IT in the field, where manholes and catch basins were mapped, invert elevations measured where possible along with sediment thickness and characteristics, etc. These reports consist of maps

depicting the piping and structures; an inspection form for each structure documenting the pipes connected to the structure, flow direction where possible, depths to the structure invert and the invert of each pipe, and sediment thickness and characteristics; and a brief narrative summarizing the results, documenting structures that could not be located because of having been paved or filled over, etc. A part of this report is a tabulation of invert elevations determined by taking the invert depths measured by IT Corporation and subtracting them from top-of-structure elevations determined by a licensed surveyor.

- o Phase I Interim Remedial Measure Work Plan, Proposed Sewer Systems Evaluation, prepared by IT Corporation, February, 1993. This includes maps designated as Figures 1 through 14 from the work plan, consisting of mapping of the sewer systems that existed when the work effort began. All structure numbers and other system references in this report are based on those maps from the work plan.
- Topographic spot elevations from an Exxon Company, U.S.A. map entitled, "Grade Elevations - Bayonne Plant," last revised July 28, 1989.
 - O A posting of groundwater elevations measured by Geraghty and Miller during a December 12, 1994 monitoring event to an overall site map. At the time of report preparation, a groundwater contour map was in preparation by Geraghty and Miller, and will be available as part of their RI report for future considerations of groundwater-sewer interactions.
 - o The results of discussions with Site Remediation Team members formerly involved in plant operations about system operations where this could not be clearly determined from maps. This pertains primarily to the operations of certain pumps, status of changes since I.M.T.T. operations began, etc.

The site history report was consulted regarding the age (generally not known) of the various portions of the sewer system, and invert elevations were plotted on sewer maps to indicate topographic position and to understand flow characteristics. Topographic elevation information, and groundwater elevation were used to initially assess cover depths on piping as well as the extent to which the pipes are likely to be below the groundwater table.

Because of the availability of records from cleaning and videotaping, less emphasis was placed on reviewing the structure inspection reports, although these were consulted regarding the condition of the structures and regarding locations where oily sediments were observed in manholes and catch basins. Incidence of findings including infiltration of water and/ or oil, cracks, chipping, holes, broken pipes, etc. were tabulated for each trunk line based on videotaping records.

Flows are addressed in this report only in summary fashion, as the major flows in the Bayonne Plant sewer pipes are nearly all stormwater runoff, with the 350 gpm base dry weather flow in the system possible at a very low water level in the system.

A preliminary map of occurrence of non-aqueous phase liquids (NAPL) from Geraghty and Miller's RI work, plus ongoing IRM work by Geraghty and Miller, Inc. and Dan Raviv Associates, Inc., was made available for consideration. This was useful in formulating tentative conclusions regarding the relationship between observed NAPL plumes and oil infiltration into sewers, but the RI results should be added to the data considered in ongoing sewer evaluation.

It should be noted that pipe lengths referenced in this report are somewhat approximate in nature. Where pipes have been videotaped, actual footage measurements are available, but where footages are based on scaling from maps they are approximate, and thus totals of footage including scaled measurements are approximate as well. The observed differences have been quite small, on the order of three percent or less.

RATIONALE FOR ASSESSING SIGNIFICANCE OF SEWER FINDINGS

The videotape records include not only the tapes, but also tables of findings for each pipe that was videotaped, giving the footage position along the pipe documenting the position of each finding and a verbal description of the nature of the finding. Examples of findings include, separated joints, infiltration of water and/or oil, cracks, chipping or spalling, holes, broken pipe sections, penetration by various objects such as pipe supports, etc. These are discussed briefly below as rationale for how decisions were made regarding major findings described herein and reported in the Site Remediation Team's Quarterly Progress Report for 4Q94.

<u>Separated joints</u> could be of great importance, or of no importance at all, depending on the degree of separation, and how the joint is performing. Sewer piping is most often vitrified clay or reinforced concrete pipe with bell and spigot joints which are pushed together during construction, and typically have some type of gasket material to prevent leakage. Most separated joints were reported with no other description, not even infiltration. This is considered to be normal performance for sewer pipe which has been in service for any significant length of time. In a few cases, complete separation had occurred and soil was visible at the pipe joint. This is obviously beyond the bounds of normal and acceptable performance, and necessitates some intervention to restore design sewer performance.

Infiltration is also normal for sewers made of pipe of discrete lengths which are pushed together during construction, and is in fact allowed for during design of sewers. Design specifications for new sewers may limit infiltration to 5,000 to 10,000 gallons per day per mile of pipe. Designers of treatment plants are advised that as sewer joints may deteriorate, a higher allowance should be used in sizing treatment capacity, perhaps 15,000 to 50,000 gallons per day per mile (Standard Handbook of Civil Engineering, Frederick S. Merritt, ed., McGraw Hill, 1968, chapter on Sanitary Engineering).

Considering 100 gpm in the lower part of the system is from the west side, an estimated 50 gpm is steam condensate, and interceptor trench pumpage is at least 20 gpm, this leaves 180 gpm of the 350 gpm total for dry weather flow as possible infiltration. For the approximately eight miles of piping in this portion of the system, this would give an overall figure of around 30,000 gallons per day per mile. As is reported herein and in the Site Remediation Team's Quarterly Progress Report, there are several major findings from the sewer evaluation that consist of heavy infiltration at particular locations. Elimination of these large point sources not typically considered in infiltration estimates will bring the average infiltration figure into a fairly normal range for a sewer system. A further indication that infiltration is not a major phenomenon is that little bypass pumping was required to dewater sewers for cleaning and videotaping operations during IT's field work.

Oil infiltration is also observed at a number of locations as reported in detailed sections which follow for each trunk line. It could be argued that since oil infiltrates under some conditions, it could also exfiltrate under others, and therefore such locations must be repaired. However, it must be noted that the whole sewer system at Bayonne functions to recover oil from the ground. This is clear, since there is little opportunity for oil to enter sewers as a result of current plant operations, and yet, significant quantities of oil are constantly recovered from the system at the East Side Treatment Plant. Figures on oil shipment quantities from the treatment plant by Exxon before the sale to I.M.T.T. took place were not available when this report was prepared but are being compiled to permit quantification of this situation.

Further, if infiltration of oil normally occurs under low flow conditions, as during videotaping, the contention that flow would reverse and cause exfiltration under storm flow conditions does not necessarily follow, since oil would float with the rising water level and tend to be carried on down the system. This fits with observed behavior, since operations personnel report that oil flow to the separator increases after heavy rainfall.

At this point, oil infiltration into the sewer system is resulting in removal of oil from the ground. Elimination of oil infiltration by repair of sewers at these locations will halt this contribution to overall removal of free product. Indeed, the horizontal orientation of the sewers may make them far more effective than vertical wells at recovering oil, and they should possibly be allowed to continue to function as they are, with the exception that major findings of damage and deterioration as reported herein be repaired.

<u>Cracking and chipping</u> can significantly affect pipe performance, or can exist for long periods of time without compromising pipe integrity depending on the severity. Cracks may only partially penetrate pipe walls, or may be compressed such that they don't leak. If cracking does not appear severe, and infiltration is not occurring, particularly if infiltration is observed at other locations nearby, it may be of no consequence. Cracking of a more severe nature, particularly if occurring in conjunction with infiltration, can be a significant finding. Chipping or spalling, as for other observations, may or may not be important,

depending on severity. Most recorded instances of chipping for footage videotaped do not by themselves appear to be associated with significant problem areas. Most seem to be ordinary deterioration associated with normal service, not sufficiently progressed to negatively affect pipe performance.

<u>Broken pipes and holes</u> require little explanation and are obviously deterioration forms which impair pipe integrity and which require repairs to restore the intended function. This may include holes which have no visible cause as well as those which were obviously caused by a penetrating object.

<u>Service connections</u>, based on their size and description, appear to be what would be classified as sublaterals now inactive, which drained specific areas and conveyed flow to larger pipes. Most service connections were not described as exhibiting flow, with very few exceptions. This indicates that they may have been plugged at an upstream location when the need for the service was eliminated based on layout changes and reconstruction. This would have been an expedient approach to plugging such lines as the upstream end would have been far more accessible.

SUMMARY OF RESULTS AND RECOMMENDATIONS

The results of the inspections discussed herein, and recommendations for additional work are summarized in this section, taken from the detailed writeups which follow for each main trunk line. They are also provided in Table 1, which gives combined information for mains, laterals, and sublaterals for all trunk lines. Information for Main Trunk #3 and Main Trunk #5 deals with recommended inspection footage, since those areas have not been done yet. Table 2 presents the major findings determined from review of videotapes for the affected trunk lines for which repairs are recommended in the pertinent detailed writeups.

For Main Trunk #1, all mains, 62 percent of laterals and 45 percent of sublaterals have been cleaned and videotaped. Inspection of an additional 1393 feet of laterals, as recommended, would bring the total to 84 percent. The amount of sublaterals inspected is considered sufficient, based on rationale presented in the detailed writeup.

For Main Trunk #2, all mains, 44 percent of laterals, and 10 percent of sublaterals have been cleaned and videotaped. Inspection of an additional 465 to 615 feet of laterals (depending on findings), as recommended, would bring the total to 68 to 73 percent.

Work has not yet been initiated on Main Trunk #3, so Table 1 presents inspection recommendations of 100 percent of mains and laterals, and 13 percent of sublaterals. This system also includes 2255 feet of former chemical plant process sewer which was cleaned and flushed at decommissioning and now handles stormwater from inactive areas. It is proposed not to inspect this based on the results of cleaning and flushing, discussed in the detailed writeup and attached as Appendix A.

For Main Trunk #4, all mains, and all laterals except those affected by some of the major findings have been cleaned and videotaped, as have 42 percent of the sublaterals. This is considered sufficient for this system portion.

For Main Trunk #5, inspection of 100 percent of mains and laterals is recommended, along with 33 percent of sublaterals, based on rationale presented in the detailed writuep.

For Main Trunk #6, figures are incomplete, since work was in proogress there as information was being gathered for this report. Through mid-December, 1994, 79 percent of mains, 59 percent of laterals, and 39 percent of sublaterals had been completed. When results are available, the partial assessment documented herein will be completed and additional inspection recommended as necessary. It is planned to inspect all mains, and all laterals unless clear rationale exists to not inspect certain sections. The percentage of sublaterals seems adequate now, but some additional footage may be recommended for inspection if warranted.

MAIN TRUNK #1 LUBES AREA, A-HILL TANKFIELD, MAIN BUILDING, PLANT ENTRANCE AREAS

Age or Approximate Range of Installation Dates - According to the November, 1994 Site History Report for the Bayonne Plant by Geraghty and Miller, Inc., all of the areas included in Main Trunk #1 except the A-Hill Tankfield had sewers prior to 1945, with exact dates unknown. As the A-Hill Tankfield has long had sewers, the probable date of construction for those is the period of modernization of the plant that took place during the 1950's. The exact date that the system reached the current configuration is not known.

Service/System Description - Main Trunk #1 is separated from the remainder of the plant, as it drains generally to the south from A-Hill and the Main Building to the West Side Treatment Plant. Here, the wastewater, consisting primarily of stormwater, but also including steam condensate and tank water drawoffs to a very limited extent, is treated by means of gravity separation and dissolved air flotation (DAF). Solids settle out and are periodically removed for disposal, and oil is skimmed from the surface and periodically shipped to a properly licensed company for reuse in fuels blending programs.

The only tank water drawoffs that currently enter the system are not as likely to include hydrocarbons as historical tank water drawoffs would have been. The only tanks for which this takes place are wax tanks, which have a clear product-water interface; stormwater retention tanks, by definition not hydrocarbon storage tanks and therefore not introducing product to the system; and Tanks 611 to 616, used to hold water from washing and flushing activities. These are used to effect oil-water separation, and breaking of emulsions by addition of polymers. The water is then drawn off below the interface level to be treated in the West Side Treatment Plant.

The treated wastewater from the West Side Treatment Plant is pumped through a former Low Pressure Salt Water Line to a point north of the Avgas Tankfield, where it enters Main Trunk #2 where it continues to the East Side Treatment Plant. When peak flows exceed the treatment capacity of the West Side Treatment Plant or as otherwise required for operational considerations such as dewatering lines for sewer cleaning and videotaping, excess water is pumped to several storage tanks, where the water is held until capacity exists to treat it.

The system has undergone some recent changes, with the purchase of a portion of the Bayonne Plant by I.M.T.T. There is a groundwater interceptor trench along a portion of the northern property boundary, from which pumped water (and potentially hydrocarbon product) was routed to Main Trunk #1. Interceptor Trench pumpage, the flow from the A-Hill Tankfield, from the Main Building, and from the plant entrance and scale areas is now routed to Main Trunk #2, keeping flow from those portions of the I.M.T.T. property draining to the sewer system being operated by I.M.T.T. This diversion was made between

Manhole 1-5 and 1-6. From this point on, Main Trunk #1 and the laterals and sublaterals that make up the system basically services the Lubes Plant area and other adjoining areas including the Helipad area and the Wax Building which are retained in ownership and operation by Exxon Company, U.S.A. One additional change has to be made to completely segregate I.M.T.T. sewer flows from Exxon sewer flows. A line from the former Exxon Chemicals area, carrying stormwater, connects with Lateral 1H upstream of CB1H-3. This connectionand two others nearby are to be eliminated and the flow re-routed to the East Side Treatment Plant.

Future Intended Use - No known change from current use.

Description of Sewer Lines - No detailed determination of percentage of different pipe materials was made, but it can be stated that the primary materials of construction are cast iron and reinforced concrete, and that some vitrified clay pipe also exists. According to historical drawings and line length measurements made during cleaning and videotaping by IT Corporation, the total estimated length of active sewer piping is 13,707 feet., excluding steam condensate lines, most of which are too small to be classified as sewers, and which are by nature unlikely to exhibit contamination. Of this total, 3297 feet are classified as mains, 6123 feet as laterals, and 4287 feet as sublaterals, based on the criteria outlined in the "Definitions" section of this report. Line classification is depicted on a schematic of the sewer system in Figure 2.

Invert Elevations, Surface Elevations, and Cover Depths in System - Pipe invert elevations are as high as 17.90 feet for a sublateral in the A-Hill Tankfield (the area of highest topographic elevations in the plant), but the main trunk line itself ranges from elevation 11.88 at the northern end of the system to 2.09 feet near the inlet to the separator. Surface elevations range from 25.0 feet in the A-Hill Tankfield to about 11.0 feet near the Platty Kill Creek and in the Helipad Area. Cover depths range from very shallow in the area of some catch basins to as much as 7 to 8 feet over some of the deeper trunk lines.

Traffic Overhead - As the plant layout has been reworked significantly over the years, the presence or absence of traffic over certain portions of the sewer lines is not considered to be discernible with enough reliability to permit meaningful conclusions to be drawn about the possible effects of vehicle loads on sewer performance and deterioration.

Assessment of Level of Certainty Regarding System Layout - This factor was addressed in the report of the tankfield sewer systems at Bayway, but it was meaningful primarily because cleaning and videotaping efforts had not begun, and it was an assessment based only on inspection of structures. At Bayonne, major portions of the system have already been cleaned and videotaped with the result that the layout of the system is well understood.

Groundwater - These comments are based on posting of groundwater elevations determined in a December 12, 1994 monitoring event performed by Geraghty and Miller. These data were provided in a preliminary fashion because of their utility to the effort covered in this report. Geraghty and Miller will prepare a groundwater contour map as part of their Remedial Investigation work based on these postings and future considerations related to groundwater should involve review of that map.

Groundwater elevations in the A-Hill area range from a high of 15.0 down to 10.0 feet, such that partial submergence of the main trunk line is probable. Most laterals and sublaterals here are likely to be above the groundwater table. In much of the Lubes Plant area, the groundwater table ranges from highs of elevation 10.0 down to elevation zero at the surface water boundaries of the plant along the Kill Van Kull and the Platty Kill Creek. This appears to place the lower mains in a position of partial submergence and laterals and sublaterals likely to be above the groundwater table. However, the specific conditions at the time of the groundwater monitoring event in comparison with the time of the sewer cleaning and videotaping are not known. Significant differences could exist because transient flow conditions from infiltration and other causes are expected to be important on this site.

Sewer Inspection Results - Cleaning and videotaping has been executed for 100 percent of the mains, 62 percent of the laterals, and 45 percent of the sublaterals, and 65.6 percent of the total footage, undifferentiated. Detailed tables documenting all findings, invert elevations, and other information for manholes and catch basins will be included in the Interim Report being prepared by IT Corporation to document their Phase I IRM Sewer Evaluation. These include 172 separated joints, 287 joints where infiltration is occurring (11 of which are described as infiltrating oil), 29 service connections (only two of which exhibit flow), and seven instances described as cracking or chipping. The significance of these specific reportings should be considered in light of the discussion in this report, in the "Rationale" section of this report.

Major findings of damage or deterioration determined by joint review of videotapes by IT Corporation and Exxon Site Remediation Team personnel were noted at four locations, and will be reported as such in the Quarterly Progress Report of the Site Remediation Team for 4Q94. Specific locations are documented in Table 2, and involve severe deterioration of sections of cast iron pipe, and of one short section of clay pipe.

Conclusions and Recommendations - The major findings described above are under review based on service to determine the need for repairs to these sections to restore the integrity of the sewer pipes. These major findings were primarily found in main trunk lines, with one in a lateral.

Since 45 percent of the sublaterals have already been cleaned and videotaped and no major findings nor oil infiltration was observed in sublaterals, no additional effort is considered warranted.

Regarding laterals, for the approximately 2343 feet not inspected, the following are recommended:

- Inspection the "laterals" portions of Laterals 1B and 1D (738 feet).
- Inspection of the "laterals" portions of Lateral 1M (430 feet).

These sections are located in active operational areas containing hydrocarbon storage tanks.

Because Laterals 1C, 1F, and 1G drain open areas with no current hydrocarbon handling, storage, or processing activities, and should be conveying stormwater runoff from crushed stone areas, inspection of these sections is not considered necessary, with the following exception. The only structure in any of these areas mentioned as having any hint of oil during the structure inspection is Manhole 1G-3 which was described as containing 14 inches of oily water. The sections of pipe upstream and downstream from this manhole should be inspected by cleaning and videotaping, i.e., the lateral from MH 1G-2 through MH 1G-4, consisting of about 225 feet of pipe. The balance of the branches described in this paragraph consist of 402 feet, 354 feet, and 194 feet respectively. Completing the recommended work will bring the total of laterals inspected over 84 percent for this trunk line.

MAIN TRUNK #2 No. 2 TANKFIELD, AVGAS TANKFIELD, AND DOMESTIC TRADE AREAS

Age or Approximate Range of Installation Dates - According to the November, 1994 Site History Report for the Bayonne Plant by Geraghty and Miller, Inc., all of the areas included in Main Trunk #2 had sewers prior to 1945, with exact installation dates unknown.

Service/System Description - Main Trunk #2 begins in the No. 2 Tankfield, running generally eastward, past the Avgas Tankfield, and taking flow from both tankfields. It continues southeasterly, collecting flow from the area around Tanks 986-988 and crossing Hook Road south of the Gate F area. Here, at Manhole 2-16, the combined flow from Main Trunk #3 and Main Trunk #4 joins Main Trunk #2. Turning north, Main Trunk #2 gathers flow from the Domestic Trade Area at Manhole 2-18, and then turns east where it combines with the outlet of Main Trunk #5 and joins Main Trunk #6.

In addition to conveying flow from the areas mentioned, Main Trunk #2 also receives pumped treated stormwater from the West Side Treatment Plant at Manhole 2-1. Main trunk #2 also receives flow which was re-routed from the A-Hill Tankfield, Main Building Area, Plant Entrance and Scale Areas, and the Interceptor Trench along the northern plant boundary, all of which formerly went to Main Trunk #1 and the West Side Treatment Plant. This change was made following the sale of portions of the plant to I.M.T.T.

Future Intended Use - No known change from current use.

Description of Sewer Lines - No detailed determination of percentage of different pipe materials was made, but it can be stated that nearly all of the sewer piping for this trunk line is reinforced concrete, with a small amount of terra cotta, and a very small amount of cast iron. It is probable that some of the smaller sublaterals for which the material was not determined are cast iron. According to historical drawings and line length measurements made during cleaning and videotaping by IT Corporation, the total estimated length of active sewer piping is 5806 feet. Of this total, 2451 feet are classified as mains, 2082 feet as laterals, and 1273 feet as sublaterals, based on the criteria outlined in this report, in the "Definitions" section. Line classifications are shown on a schematic of the sewer system in Figure 3.

Invert Elevations, Surface Elevations, and Cover Depths in System - Pipe invert elevations are as high as 16.60 feet at the upper end of the system in No. 2 Tankfield, and range down to 4.64 feet at Manhole 2-16 near the bottom end of Main Trunk #2. Surface elevations in the No. 2 Tankfield range from 17.0 to 18.75 feet, those in the Avgas Tankfield range from 14.7 to 16.0 feet, those in the Domestic Trade Area from 12.7 to 15.3 feet and those near Gate F from 11.7 to 12.6 feet. Cover depths range from very shallow

in the area of some catch basins to as much as 5 to 7 feet over some of the deeper trunk lines.

Traffic Overhead - As the plant layout has been reworked significantly over the years, the presence or absence of traffic over certain portions of the sewer lines is not considered to be discernible with enough reliability to permit meaningful conclusions to be drawn about the possible effects of traffic on sewer performance and deterioration.

Assessment of Level of Certainty Regarding System Layout - This factor was addressed in the report of the tankfield sewer systems at Bayway, but it was meaningful primarily because cleaning and videotaping efforts had not begun, and it was an assessment based only on inspection of structures. As for Main Trunk #1, major portions of the Main Trunk #2 system have already been cleaned and videotaped with the result that the layout of the system is well understood.

Groundwater - These comments are based on posting of groundwater elevations determined in a December 12, 1994 monitoring event performed by Geraghty and Miller. These data were provided in a preliminary fashion because of their utility to the effort covered in this report. Geraghty and Miller will prepare a groundwater contour map as part of their Remedial Investigation work based on these postings and future considerations related to groundwater should involve review of that map.

The groundwater table in the areas of Main Trunk #2 appears to slope to the northeast from a high elevation of 13.52 feet near Tanks 1005 and 1006 to a low of about 5.0 feet in the Avgas Tankfield, the domestic Trade areas, and the areas east of Gate F where Main Trunk #2 terminates. It appears that the groundwater table may be below the sewer piping through much of the system, and such that partial submergence may occur only for the mains in the lower portion of the system. However, the specific conditions at the time of the groundwater monitoring event in comparison with the time of the sewer cleaning and videotaping are not known. Significant differences could exist because transient flow conditions from infiltration and other causes are expected to be important on this site.

Sewer Inspection Results - Cleaning and videotaping has been executed for 100 percent of the mains, 43 percent of the laterals, and 10.2 percent of the sublaterals, and 54 percent of the total footage, undifferentiated. Detailed tables documenting all findings, invert elevations, and other information for manholes and catch basins will be included in the Interim Report being prepared by IT Corporation to document their Phase I IRM Sewer Evaluation. These include 343 separated joints, 85 joints where infiltration is occurring (14 of which are described as infiltrating oil), 19 service connections (none of which are described as exhibiting flow, and 14 of which are described as plugged), and 30 instances described as cracking or chipping.

The significance of these specific reportings should be considered in light of the discussion in this report, in the "Rationale" section above.

Major findings of damage or deterioration determined by joint review of videotapes by IT Corporation and Exxon Site Remediation Team personnel were noted at four locations, and will be reported as such in the Quarterly Progress Report of the Site Remediation Team for 4Q94. Specific locations are documented in Table 2, and involve two holes in pipes made my penetrating objects, a zone with a large volume of water infiltration, and a pipe which seems to just end, with the presence of oil described.

Conclusions and Recommendations - The major findings described above indicate a definite need for repairs to these sections to restore the integrity of the sewer pipes. These major findings were found in main trunk lines and laterals.

Since 10.2 percent of the sublaterals have already been cleaned and videotaped and no major findings nor oil infiltration was observed in sublaterals, no additional effort is considered necessary.

Regarding laterals, of the 1175 feet not inspected, recommendations follow:

- o The "laterals" portion of Laterals 2B, 2C, and 2D should be inspected, amounting to a total of 465 feet. These laterals collect significant flow from a tank storage area.
- o Lateral 2E in the Domestic Trade Area is in a former plant area now leased to a trucking company and diesel repair shop, with sewer flows consisting of stormwater runoff. No oily sediments were found during structure inspections. MH 2E-1 and MH 2E-2 were not initally not found, but have now been located and should be inspected. If no oily sediments are encountered, no further action is recommended. If oily sediments are encountered, the pipe connecting these structures should be cleaned and videotaped, a length of 150 feet.
- o The piping making up Lateral 2A was classified as sublaterals because of its size (starting at two inch diameter) and the fact that the drainage it collects is of little significance, the area around the tanks themselves draining to other catch basins.

Completion of the work recommended will bring the percentage of laterals inspected for Main Trunk #2 up from 43 to 68 or 73 percent.

MAIN TRUNK #3 ASPHALT PLANT AND EXXON CHEMICAL PLANT AREAS

It should be noted that the status of the sewer evaluation for this trunk line is different from that for Main Trunk Lines #1 and #2, since the structure inspection portion of the work has been done, but more detailed inspection phases have not been initiated for this system as of the time this report was prepared. Accordingly, the purpose of this section is somewhat different than that of sections covering system elements where cleaning and videotaping has been completed. Portions of the system will be recommended for more detailed inspection, based on rationale to be discussed in this section.

Age or Approximate Range of Installation Dates - According to the November, 1994 Site History Report for the Bayonne Plant by Geraghty and Miller, Inc., all of the areas included in Main Trunk #3 had sewers prior to 1945, with exact dates unknown.

Service/System Description - The system is depicted on Figure 9 of the IRM Work Plan for sewer evaluation at Bayonne, dated February, 1993, by IT Corporation. The Main Trunk #3 system serves the Asphalt Plant Area and the former Exxon Chemical Plant Area, both of which are part of the parcel which was conveyed to I.M.T.T. At the western end of the area, one section of piping designated as part of this system because of geographical and plant service factors (Lateral 1HC), flows to the west and joins the Main Trunk #1 system. This connection will be eliminated and the flow re-routed to complete the separation between sewer systems belonging to I.M.T.T., and those retained by Exxon in the Lubes Area.

Within the Chemical Plant area, there is a separate process sewer system which formerly served the Paramins Plant. The lines which belong to this system are shown on Figure 9 as referenced above, and are highlighted in the inset view of the Chemical Plant area which is on Figure 3 of the IRM Work Plan. The balance of the system connected to Main Trunk #3 is a stormwater system, which conveys flow eastward, where flow from Main Trunk #4 joins it at Manhole 3-18. Main Trunk #3 then ends, conveying flow to Main Trunk #2 at Manhole 2-16.

As reported by Geraghty and Miller, Inc. in the November, 1995 Site History Report for the Bayonne Plant, the Exxon Chemicals process system collected process wastewater during plant operation and conveyed it to a small wastewater treatment plant at the eastern end of the Exxon Chemical area. The treatment consisted of oil/water separation, with both oil and water being taken by truck, the latter to the Exxon Bayway Refinery in Linden, N.J. where it was treated with other Exxon Chemical wastewaters.

The Chemical Plant had been decommissioned and was being dismantled prior to the sale of the property to I.M.T.T. As a part of this activity, the process sewers were cleaned by

jetting with high pressure water, and then flushed with saltwater from the firewater grid. During this flushing operation, water was sampled for analysis at four points in the system. The results will be described in a subsequent section. Following completion of that process, the separate process system was eliminated and the separator outlet reconnected to the overall Bayonne Plant sewer system, flowing into Main Trunk #4. (The separator is no longer operated, and just acts as a basin through which sewer flows pass.) Since there are no operations in this area, the piping of the former chemical system now conveys only stormwater from inactive areas.

Future Intended Use - No known change from current use.

Description of Sewer Lines - Pipe materials are not known in detail, but the typical range of materials is represented, including reinforced concrete, cast iron, vitrified clay pipe, ductile iron, etc. No detailed determination of percentage of different pipe sizes was made, but in general, main trunk lines are 18 inch to 42 inch diameter, laterals range from 8 inch to 18 inch diameter, but are mostly 12 inches, and sublateral range from 4 inch to 12 inch diameter with most being 6 to 8 inches. Based on available drawings of the system, it is estimated that there are 13,800 feet of sewer pipe, 2880 feet of main trunk lines, 2568 feet of laterals, 6095 feet of sublaterals, and 2255 feet of lines in the chemical process system, undifferentiated by classification. Criteria used in classifying lines are outlined in this report, in the "Definitions" section of this report. Because of the complexity of the system, only the sublaterals recommended for inspection, the mains, and the laterals are shown on a schematic of the sewer system in Figure 4.

Invert Elevations, Surface Elevations, and Cover Depths in System - Pipe invert elevations for the main trunk line of the system range from 4.86 feet at Manhole 3-25 to 9.90 feet at Manhole 3-6, and up to 18.39 on a side branch of the trunk at Manhole 3-1. Many of the catch basins on the sublaterals are between 12.0 and 17.0 feet in elevation, making much of the system quite shallow. The chemical process system has catch basins at elevations of 17.0 to 18.0 feet (nearly at ground level), and empties into the chemical separator basin.

Ground surface elevations in the Asphalt Plant and Chemical Plant areas where the bulk of the footage in the sewer system is found are mostly between 17.0 and 18.0 feet. As the main trunk line proceeds away to the east, the ground surface gradually falls away to around 13.0 feet in the vicinity of Manhole 3-25, where Main Trunk #3 ends. Cover depths over sewers are quite shallow at the upper catch basins in the system, and range up to 7 to 8 feet over the deeper main trunk lines.

Traffic Overhead - As the plant layout has been reworked significantly over the years, the presence or absence of traffic over certain portions of the sewer lines is not considered to be discernible with enough reliability to permit meaningful conclusions to be drawn about the possible effects of traffic on sewer performance and deterioration.

Assessment of Level of Certainty Regarding System Layout - Because the detailed inspection phase of the program has not begun, there is a small level of uncertainty about the system layout, because the structures in the field do not exactly match the existing drawings. In some cases, structures shown are not located and in others, structures are located which are not depicted on the drawings. These types of discrepancies for this system are relatively minor and thus the layout is quite well known. Many of them will be resolved during more detailed inspection activities.

Groundwater - These comments are based on posting of groundwater elevations determined in a December 12, 1994 monitoring event performed by Geraghty and Miller. These data were provided in a preliminary fashion because of their utility to the effort covered in this report. Geraghty and Miller will prepare a groundwater contour map as part of their Remedial Investigation work based on these postings and future considerations related to groundwater should involve review of that map.

Groundwater elevations in the area of Main Trunk #3 range from around 8.0 at the western end of the Asphalt Plant and Chemical Plant areas, to 6.0 at the eastern end, and down to 4.5 to 5.0 at the downstream end of Main Trunk #3. This seems to more or less follow the topography and would appear to place much of the system above the groundwater table. However, the site hydrogeology is complex and there may be other factors that the inital assessment here does not consider. The specific conditions at the time of the groundwater monitoring event in comparison with the time of the sewer cleaning and videotaping are not known. Significant differences could exist because transient flow conditions from infiltration and other causes are expected to be important on this site

Sewer Inspection Results - Sewer inspection results available at this time basically consist of the structure inspection forms, documenting pipe positions, invert depths, structure condition, amount of sediment, and whether or not oil was observed in the sediments. These were reviewed, and it was found that oily sediments existed in main trunk line structures from Manhole 3-6 and downstream, and also in some structures on lines classified as laterals and a few on sublaterals. Structures in the former Chemical Plant process sewer system exhibited very little sediment, which was not described as oily. Throughout the system, nearly all structures were described as in good condition.

Also reviewed were the results of the cleaning of the Chemical Plant process sewer system, which consisted of water analyses from four locations on samples taken during a flushing of the sewer system when cleaning was complete. The information documenting the cleaning is attached as Appendix A. The water was saltwater from the firewater grid, which was sampled at the hydrant. Based on communication with Sharon Sexton of Exxon Chemical's Paramins Division at the Bayway Chemical Plant, there were two tankfields considered to have the likelihood to show contamination with dichlorobenzene and related compounds. Accordingly, samples were taken from the two manholes immediately downstream from these areas, designated on the test results as Manhole 103 and Manhole

111. These are marked on Figure A-1 in Appendix A, and are the structures designated as CSMH-5 and CSMH-6 in the current nomenclature. The fourth sample was taken from the inlet to the separator at the end of the system.

The laboratory analytical results are attached to this report as Appendix A. They indicate that the cleaning of the system was effective, because there were very few contaminants detected. Concentrations of detected contaminants are listed in Table 3. All samples had low levels of lead and zinc. There were essentially no detections of volatile or semi-volatile contaminants in the hydrant water used to flush the system, with the exception of phenol, which appeared in a separate analysis, but not in the semivolatile scan. The firewater comes from the Kill Van Kull. Other detections were mostly in Manhole 111 and at the separator, and included 1,2-dichlorobenzene, naphthalene, benzene, and chlorobenzene. Benzene was never used in the plant, but its presence may be associated with the other related compounds. For an industrial wastewater system, these concentrations are extremely low and are indicative of effective cleaning of the system. As they continue through the sewer system, they would tend to partition to the oil phase, and be removed in the oil-water separation and other steps in the wastewater treatment process.

Conclusions and Recommendations - The test results described above for the test flushing of the former Chemical Plant process sewer system indicate its effectiveness in removing residual contamination from chemicals processing from the sewers. Further, there have been no operations in the area since the cleaning was complete, and the sewers now convey stormwater from inactive plant areas. Accordingly, it is not considered necessary to perform any further inspection of the former Chemical Plant process system, consisting of approximately 2255 feet of sewer piping.

Regarding the balance of the Main Trunk #3 system, it is proposed that the main trunk lines and the laterals, approximately 2880 feet and 2568 feet respectively, be inspected by cleaning and videotaping. In addition, about 810 feet of the total of 6095 feet of sublaterals (13.3 percent) are recommended for inspection, based on providing an approximate ten percent inspection total for sublaterals as has been discussed with NJDEPE. Recommended sections for inspection are based on sampling different system branches, and where applicable, are in some cases adjacent to structures that were described as containing oily sediments. These sections are listed on Figure 4.

MAIN TRUNK #4 No. 3 TANKFIELD

Age or Approximate Range of Installation Dates - According to the November, 1994 Site History Report for the Bayonne Plant by Geraghty and Miller, Inc., the dates of construction for the sewers in Main Trunk #4 are not known. Considering the historical position of a separator which served this area, it is probable that most or all of the system predates 1940.

Service/System Description - Main Trunk #4 serves the No. 3 Tankfield, with the main lines running generally eastward, gathering flow from the various diked areas of the tankfield by means of laterals. South of Tank 903 (at Manhole 4-7), the main trunk line turns and runs north, where it empties into Manhole 3-18. From there it joins with Main Trunk #3 to flow into Main Trunk #2, and on to the East Side Treatment Plant.

Future Intended Use - No known change from current use.

Description of Sewer Lines - No detailed determination of percentage of different pipe materials was made, but it can be stated that the main trunk lines consist of vitrified clay pipe and reinforced concrete pipe 24 inches in diameter. Nearly all of the balance of piping is 12 inch diameter reinforced concrete, with a few lines of clay or cast iron pipe. According to historical drawings and line length measurements made during cleaning and videotaping by IT Corporation, the total estimated length of active sewer piping is 3234 feet. Of this total, 1347 feet are classified as mains, 1362 feet as laterals, and 525 feet as sublaterals, based on the criteria outlined in this report, in the "Definitions" section. Classification of lines is shown on a schematic of the sewer system in Figure 5.

Invert Elevations, Surface Elevations, and Cover Depths in System - Pipe invert elevations range from 9.33 feet at the upper end of the system down to 5.4 feet at Manhole 3-18A where Main Trunk #4 empties into Main Trunk #3. Surface elevations on the dike tops are around 18.0 to 20.0 feet. Areas within the dikes of the larger tanks are mostly between 11.0 and 12.0 feet in elevation and the diked area for Tanks 901-903 ranges from 15.3 to 16.5 feet. Cover depths range from very shallow in the area of some catch basins to 4 to 6 feet over some of the deeper trunk lines, excluding consideration of the greater thickness of cover where dikes are raised several feet higher.

Traffic Overhead - As the plant layout has been reworked significantly over the years, the presence or absence of traffic over certain portions of the sewer lines is not considered to be discernible with enough reliability to permit meaningful conclusions to be drawn about the possible effects of traffic on sewer performance and deterioration. It does appear that this area has been devoted to storage tanks for a very long time and it is doubted that traffic has played a significant part in sewer system condition.

Assessment of Level of Certainty Regarding System Layout - This factor was addressed in the report of the tankfield sewer systems at Bayway, but it was meaningful primarily because cleaning and videotaping efforts had not begun, and it was an assessment based only on inspection of structures. The overall layout of the system is well known because nearly all of it has been cleaned and videotaped, and the few structures that were not located during the inital structure inspection were minor structures at the periphery of the system.

Groundwater - These comments are based on posting of groundwater elevations determined in a December 12, 1994 monitoring event performed by Geraghty and Miller. These data were provided in a preliminary fashion because of their utility to the effort covered in this report. Geraghty and Miller will prepare a groundwater contour map as part of their Remedial Investigation work based on these postings and future considerations related to groundwater should involve review of that map.

In the area of Main Trunk #4 groundwater elevations of 5.0 to 6.0 feet are prevalent through the area. Considering the position of the invert elevations relative to the groundwater table, it appears that the sewer pipes are above the groundwater table in most of this area. However, the specific conditions at the time of the groundwater monitoring event in comparison with the time of the sewer cleaning and videotaping are not known. Significant differences could exist because transient flow conditions from infiltration and other causes are expected to be important on this site.

Sewer Inspection Results - Cleaning and videotaping has been executed for 100 percent of the mains, 90 percent of the laterals, and 42 percent of the sublaterals, and 84 percent of the total footage, undifferentiated. The only portions of lateral not inspected were those not accessible by video camera due to some of the major findings reported below. Detailed tables documenting all findings, invert elevations, and other information for manholes and catch basins will be included in the Interim Report being prepared by IT Corporation to document their Phase I IRM Sewer Evaluation. These include 292 separated joints, 59 joints where infiltration is occurring (four of which are described as infiltrating oil), 10 service connections (none of which are described as exhibiting flow), 32 instances described as cracking or chipping, and 11 instances described as broken or holes.

The significance of these specific reportings should be considered in light of the discussion in this report, in the "Rationale" section above.

Major findings of damage or deterioration determined by joint review of videotapes by IT Corporation and Exxon Site Remediation Team personnel were noted at eight locations, and will be reported as such in the Quarterly Progress Report of the Site Remediation Team for 4Q94. Specific locations are documented in Table 2, and involve three holes in

pipes made by support columns and a telephone pole, two zones with a large volume of water infiltration, two holes in a pipe, and a possible break in the bottom of a pipe.

Conclusions and Recommendations - The major findings described above indicate a definite need for repairs to these sections to restore the integrity of the sewer pipes. Regarding infiltration, more information from the groundwater monitoring effort is needed to develop a full understanding of the reason for the infiltration. However, in general, the infiltration patterns observed do not seem to be indicative of anything but a fairly normal sewer system with a long service life. The oil infiltration situation should be considered in conjunction with free product investigations for IRM and RI studies. It may be that sewer system is an effective collector of oil, as discussed earlier in this report.

Nearly all of the system has been cleaned and videotaped, with the exception of some minor sublaterals and two laterals which could not be fully inspected due to some of the major findings reported above and which are recommended for repairs. No additional inspection is considered to be necessary, as the system has been well characterized.

MAIN TRUNK #5 GENERAL TANKFIELD

It should be noted that the status of the sewer evaluation for this trunk line is different from that for Main Trunk Lines #1, #2, and #4, since the structure inspection portion of the work has been done, but more detailed inspection phases have not been initiated for this system as of the time this report was prepared. Accordingly, the purpose of this section is somewhat different than that of sections covering system elements where cleaning and videotaping has been completed. Portions of the system will be recommended for more detailed inspection, based on rationale to be discussed in this section.

Age or Approximate Range of Installation Dates - According to the November, 1994 Site History Report for the Bayonne Plant by Geraghty and Miller, Inc., the General Tankfield, which is served by Main Trunk #5 had sewers prior to 1945, with exact dates of installation unknown.

Service/System Description - Main Trunk #5 is within the areas of the plant now owned by I.M.T.T. and serves the General Tankfield, consisting of one north-south main collecting flow from three laterals which run east and west. At Manhole 5-7, flow combines with that from Main Trunk #2 to flow south into Main Trunk #6 and then to the East Side Treatment Plant.

Future Intended Use - No known change from current use.

Description of Sewer Lines - No detailed determination of percentage of different pipe materials was made, but it can be stated that nearly all of the sewer piping for this trunk line is either reinforced concrete or vitrified clay, possibly with a small amount of cast iron on a few sublaterals. Main trunk lines are either 24 inch diameter pipe or 36 by 42 inch oval pipe, and most laterals and sublaterals are 12 inch diameter, with one 24 inch diameter lateral. According to historical drawings, the total estimated length of active sewer piping is 4337 feet. Of this total, 1088 feet are classified as mains, 1611 feet as laterals, and 1638 feet as sublaterals, based on the criteria outlined in this report, in the "Definitions" section. Classification of lines is depicted on a sewer system schematic in Figure 6.

Invert Elevations, Surface Elevations, and Cover Depths in System - Pipe invert elevations for the main trunk lines range from 4.90 feet to 6.44 feet, those for laterals from 5.49 to 7.57 feet, and those for sublaterals up to 8.95 feet. Surface elevations within the tank dikes are in the range of 11.0 to 13.0 feet and up to 16.0 to 16.5 feet on the dike along the south side of the tankfield. Cover depths range from 1.5 feet at shallower catch basins to four to five feet over the deeper trunk lines, except below dikes where cover could be up to eight feet.

Traffic Overhead - As the plant layout has been reworked significantly over the years, the presence or absence of traffic over certain portions of the sewer lines is not considered to be discernible with enough reliability to permit meaningful conclusions to be drawn about the possible effects of traffic on sewer performance and deterioration. This plant area has been a tankfield for a very long time, but the layout has changed as tanks have been dismantled and new ones constructed in their place. Traffic damage in not inconceivable, but is not as likely as it is below major plant roadways.

Assessment of Level of Certainty Regarding System Layout - The system layout is well known, with almost no discrepancies between the drawings and findings in the field during the structure inspection

Groundwater - These comments are based on posting of groundwater elevations determined in a December 12, 1994 monitoring event performed by Geraghty and Miller. These data were provided in a preliminary fashion because of their utility to the effort covered in this report. Geraghty and Miller will prepare a groundwater contour map as part of their Remedial Investigation work based on these postings and future considerations related to groundwater should involve review of that map.

Groundwater elevations in the area of Main Trunk #2 range from 5.5 to 7.0 feet at the southern boundary of the area to elevations of 3.5 to 4.0 feet at the northern boundary, apparently giving a gentle slope toward the north. Considering the position of the invert elevations relative to the groundwater table, it appears that the sewer pipes are above the groundwater table in most of this area. However, the specific conditions at the time of the groundwater monitoring event in comparison with the time of the sewer cleaning and videotaping are not known. Significant differences could exist because transient flow conditions from infiltration and other causes are expected to be important on this site.

Sewer Inspection Results - To date, only the structure inspection phase of the sewer evaluation has been completed. Nearly all structures were described to be in good condition, with only two structures described as in poor condition. These are MH 5-5 and CB5C-1. In addition, 12 structures were described as having oily sediments. These are manholes MH 5-2, MH 5-3, MH 5A-1, MH 5A-2, MH 5A-3, MH 5B-2, MH 5C-1. MH 5C-3, CB 5A-1, CB 5A-3, CB 5A-4, and CB 5C-2.

Conclusions and Recommendations - It is proposed that the main trunk lines and the laterals, 1088 feet and 1611 feet respectively, be inspected by cleaning and videotaping. In addition, 545 feet of the 1638 feet of sublaterals (33.3 percent) are recommended for inspection, based on providing an approximate ten percent inspection total for sublaterals as has been discussed with NJDEPE. Recommended sections for inspection are based on sampling different system branches, and where applicable, are in some cases adjacent to structures that were described as containing oily sediments. These sections are as follows:

- o From CB 5A-1 to MH 5A-1
- o From CB 5A-3 to MH 5A-2
- o From CB 5A-4 to MH 5A-3
- o From CB 5C-2 to MH 5C-4
- o From MH 5C-1 to MH 5C-2
- o From MH 5C-2 to MH 5C-3

This provides for inspection of all of the sublaterals having structures described as having oily sediments.

MAIN TRUNK #6 LOW SULFUR AND SOLVENT TANKFIELDS, PIER 6 AND 7. AND EAST SIDE TREATMENT PLANT AREAS

Although much of the cleaning and videotaping has been completed for this trunk line system, work was still in progress when the preparation of this report began. Accordingly, the state of completion of sewer evaluation recorded herein is as of December, 1994. Also, as the work was in progress, and significant data reduction is involved in generating reports, results were not available for all of the piping that had been cleaned and videotaped. Results discussed in detail herein are limited to the portion of the trunk line in the Solvent Tankfield, and Laterals 6A and 6B, which are in the same general area.

Age or Approximate Range of Installation Dates - According to the November, 1994 Site History Report for the Bayonne Plant by Geraghty and Miller, Inc., all of the areas included in Main Trunk #6 had sewers prior to 1945, with exact dates of installation unknown.

Service/System Description - Main Trunk #6 begins at Manhole 5-8, just south of the General Tankfield, and conveying flow onward from the rest of the plant to the East Side Treatment Plant as well as collecting stormwater flow from the areas listed above. At Manhole 6-1, the main trunk line heads east to the treatment plant, gathering flow through systems of laterals and sublaterals draining the various areas.

Future Intended Use - No known change from current use.

Description of Sewer Lines - No detailed determination of percentage of different pipe materials was made, but it can be stated that nearly all of the sewer piping for this trunk line is reinforced concrete and vitrified clay. There may be cast iron pipe as well, but none has been inspected to date. According to historical drawings and line length measurements made during cleaning and videotaping by IT Corporation, the total estimated length of active sewer piping is 8331 feet. Of this total, 3028 feet are classified as mains, 3272 feet as laterals, and 2031 feet as sublaterals, based on the criteria outlined in this report, in the "Definitions" section. Line classifications are depicted on a sewer system schematic in Figure 7.

Invert Elevations, Surface Elevations, and Cover Depths in System - Much of the area had not been surveyed for invert elevations when report preparation began. However, in the Low Sulfur and Solvent Tankfields, the invert elevations of the main trunk lines are between 4.0 and 5.38 feet, with invert elevations of laterals ranging up to 9.28 feet and several sublaterals to 10.0 to 11.0 feet. Surface elevations throughout much of the area are around 12.0 feet with few outside the 11.0 to 13.0 range. Cover depths range from very shallow in the area of some catch basins to as much as 5 to 7 feet over some of the deeper trunk lines.

Traffic Overhead - As the plant layout has been reworked significantly over the years, the presence or absence of traffic over certain portions of the sewer lines is not considered to be discernible with enough reliability to permit meaningful conclusions to be drawn about the possible effects of traffic on sewer performance and deterioration. This plant area has been a tankfield for a very long time, but the layout has changed as tanks have been dismantled and new ones constructed in their place. Traffic damage in not inconceivable, but is not as likely as it is below major plant roadways.

Assessment of Level of Certainty Regarding System Layout - This factor was addressed in the report of the tankfield sewer systems at Bayway, but it was meaningful primarily because cleaning and videotaping efforts had not begun, and it was an assessment based only on inspection of structures. As for much of the rest of the plant at Bayonne, major portions of the Main Trunk #6 system have already been cleaned and videotaped with the result that there is little uncertainty about the layout of the system.

Groundwater - These comments are based on posting of groundwater elevations determined in a December 12, 1994 monitoring event performed by Geraghty and Miller. These data were provided in a preliminary fashion because of their utility to the effort covered in this report. Geraghty and Miller will prepare a groundwater contour map as part of their Remedial Investigation work based on these postings and future considerations related to groundwater should involve review of that map.

The groundwater table in the area of Main Trunk #6 appears to slope gently to the eastward to New York Bay from about 5.0 to 6.0 feet down to elevation zero, as would be expected. Some localized variability appears which could be due to plumes of free product depressing the water surface, or from pumping of recovery wells as a part of IRM activities, or a combination. However, it does appear that the groundwater table may be below the sewer piping through some of the system, and such that partial submergence may occur for the main trunk lines. The specific conditions at the time of the groundwater monitoring event in comparison with the time of the sewer cleaning and videotaping are not known. Significant differences could exist because transient flow conditions from infiltration and other causes are expected to be important on this site.

Sewer Inspection Results - Cleaning and videotaping has been executed for 79 percent of the mains, 59 percent of the laterals, and 39 percent of the sublaterals, and 61 percent of the total footage, undifferentiated. Work has continued to inspect additional lines. Detailed tables documenting all findings, invert elevations, and other information for manholes and catch basins will be included in the Interim Report being prepared by IT Corporation to document their Phase I IRM Sewer Evaluation. These include the same types of findings as in the other portions of the system, including separated joints, joints where infiltration is occurring (some of which are described as infiltrating oil), service connections, and a number of instances described as cracking or chipping. Numbers are not tabulated here because the work is not complete

Oil infiltration was noted in 13 joints between Manholes 5-8 and 6-1, as well as one joint between MH 6-5 and MH 6-6, MH 6-5 and MH 6-4, and MH 6B-4 and MH 6B-3. There are indications of NAPL in these areas based on preliminary results of ongoing RI investigations.

The significance of these specific reportings should be considered in light of the discussion in this report, in the "Rationale" section.

Major findings of damage or deterioration determined by joint review of videotapes by IT Corporation and Exxon Site Remediation Team personnel were noted at eight locations, and will be reported as such in the Quarterly Progress Report of the Site Remediation Team for 4Q94. Specific locations are documented in Table 2, and involve primarily holes and partially collapsed sections of pipe. two holes in pipes made my penetrating objects, a zone with a large volume of water infiltration, and a pipe which seems to just end, with the presence of oil described.

Conclusions and Recommendations - The major findings described above indicate a definite need for repairs to these sections to restore the integrity of the sewer pipes. These major findings were primarily found in main trunk lines and laterals.

Since 39 percent of the sublaterals have already been cleaned and videotaped and no major findings nor oil infiltration was observed in sublaterals, no additional inspection of sublaterals appears to be necessary. When the balance of information from field inspection efforts is available in the Interim Report by IT Corporation, this will be reexamined as will the percentage of laterals inspected, and additional recommendations will be developed if necessary.

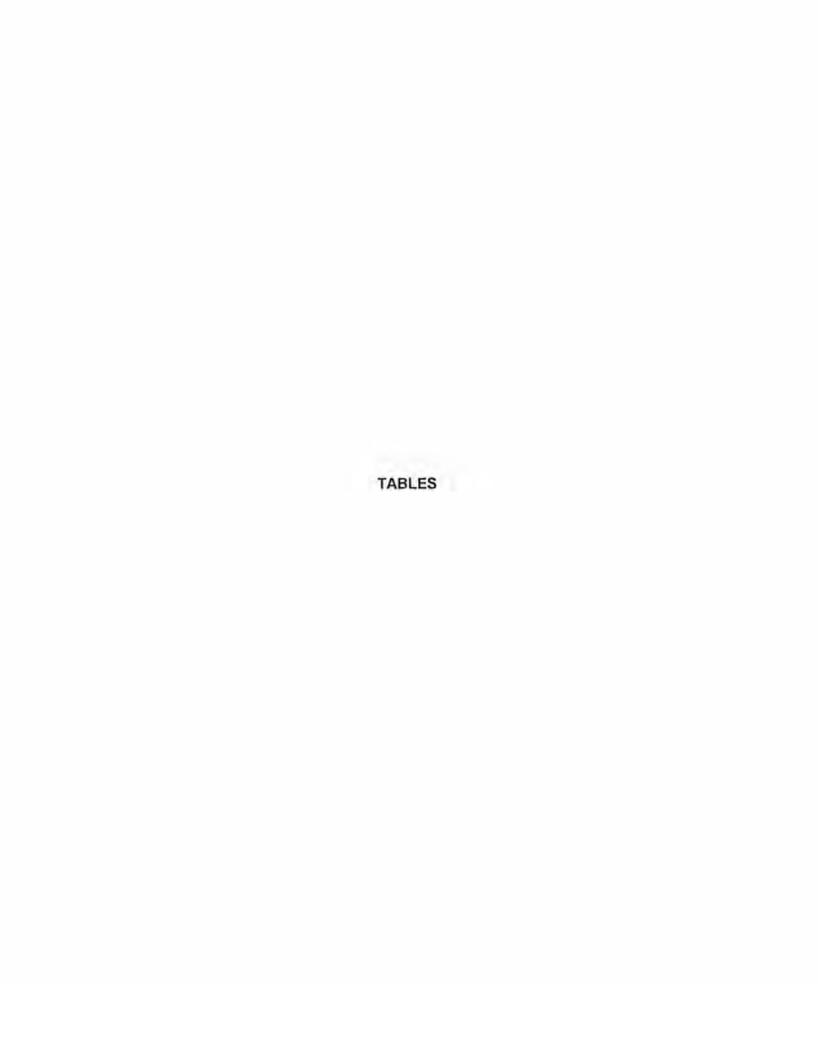


TABLE 1

EXXON COMPANY, U.S.A. - BAYONNE PLANT
SEWER INSPECTION RESULTS AND RECOMMENDATIONS

Trunk Line #	#1	#2	#3	#4	#5	#6	Sum, fi
MAINS						100	
Total Footage	3,297	2,451	2,880	1,347	1,088	3,028	14,091
Footage Inspected	3,297	2,451	0	1,347	0	2,390	1 200
% Footage Inspected	100	100	0	100	0	79	
Additional or new footage						_ 1	
recommended to inspect			2,880		1,088		
New % footage inspected			100		100		
LATERALS						- 1	
Total Footage	6,123	2,082	2,568	1,362	1,611	3,272	17,018
Footage Inspected	3,780	907	0	1,134	0	1,932	0.50
% Footage Inspected	62	44	0	83	0	59	
Additional or new footage							
recommended to inspect	1,393	615	2,568		1,611		
New % footage inspected	84	73	100		100	59	
SUBLATERALS							
Total Footage	4,287	1,273	6,095	525	1,638	2,031	15,849
Footage Inspected	1,910	130	0	220	110000	797	74140
% Footage Inspected	45	10	0	42	0	39	
Additional or new footage							
recommended to inspect			810		545		
New % footage inspected			13		33		No. 7
Trunk Line Totals	13,707	5,806	11,543	3,234	4,337	8,331	46,958

Subtotal 46,958
Process piping in former Chemical Plant 2,255
Inactive sewers 2,713

Grand Total, ft 51,926

TABLE 2
SUMMARY of MAJOR SEWER LINE FINDINGS
FOR LINES VIDEOED THROUGH DECEMBER 16, 1994
FORMER EXXON BAYONNE TERMINAL
BAYONNE, NEW JERSEY

Loc	ation	Pipe	Pipe	Distance			Tape	Tape Location
From	То	Diam. (in)	Material	(Ft)		Sewer Findings	Number	Hr-Min.Sec
MAIN TRU	NK LINE #1							
MH-1-7	MH-1-8	36	Cast Iron	114.0	1.	Bottom of pipe missing	E7	0-07.35
MH-1K-4	MH-1K-5	24	Cast Iron	21.0	1,	Bottom of pipe deteriorated	E33A	0-10.45
MH-1N-5	MH-1N-4	12	Cast Iron	55.0	1.	15 foot break in bottom of pipe	E57A	0-06.00
MH-1P-5	MH-1P-26	24	Clay	6.0	1.	Cracked pipe along bottom	E67	0-01.21
	NK LINE #2	445	225	0.52			42	12 12 22
CB-2-4	MH-2-1	24	RCP	132.8	1.	Wood 2x4 protruding into pipe through joint	16	0-42.00
MH-2-8	?	10	Corrugated Metal	284.0	1.	Unable to determine end of line, but videotaped up to 284 feet, Unknown origin of line.	2B	
MH-2-13	MH-2-14	24	Terra Cotta	83.3	1.	Hole in pipe at 9:00 with metal pipe protruding into line.	13	0-38.44
MH-2-15	MH-2-14	24	Terra Cotta	11.4	1.	Large volume of water infiltration at 6:30	12	0-06.40
			11.5.20	13,6	2.	Large volume of water infiltration at 4:00	12	0-07.48

TABLE 2 SUMMARY of MAJOR SEWER LINE FINDINGS FOR LINES VIDEOED THROUGH DECEMBER 16, 1994 FORMER EXXON BAYONNE TERMINAL BAYONNE, NEW JERSEY

Loc	ation	Pipe	Pipe	Distance		Tape	Tape Location
From	То	Diam. (in)	Material	(Ft)	Sewer Findings	Number	Hr-Min.Sec
MAIN TRU	NK LINE #4	11.71		1 = 1			
MH-4-5	MH-4-4	24	Clay	187.1	Support column through top of pipe	46	0-55.30
MH-4-7	MH-3-18A	- 24	RCP	11.0	. Large volume of water infiltrating through joint	86	0-00.52
				403.1	Large volume of water infiltrating through joint	86	0-56.15
LATE	RAL 4A						
MH-4A-2	MH-4A-3	12	Cast Iron	57.0	. Possible break in bottom of pipe	49	0-12.15
MH-4A-4	MH-4A-8	12	RCP	156.2	. Hole in pipe at 3:00	53	0-40.05
	100		0.34	176.3	. Hole in pipe at 2:00	53	0-46.30
MH-4-4	MH-4A-6	12	RCP	8.7	Support column through top of pipe	56	0-02.55
LATE	RAL 4B		1.50				
CB-4B-3	MH-4B-1	12	Clay	19.0	. Telephone pole through top of pipe	63	0-06.20
MAIN TRU	NK LINE #6						VI.68332
MH-6-1	MH-5-8	24	Clay	209.0	 Pipe changes to corrugated metal at this point. Appears as if the corrugated pipe was used to patch 	67	1-30.00

TABLE 2
SUMMARY OF MAJOR SEWER LINE FINDINGS
FOR LINES VIDEOED THROUGH DECEMBER 16, 1994
FORMER EXXON BAYONNE TERMINAL
BAYONNE, NEW JERSEY

Loc	ation	Pipe	Pipe	Distance				Tape Location
From	To	Diam. (in)	Material	(Ft)		Sewer Findings	Tape Number	Hr-Min.Sec
MAIN TRUN	K LINE #8							
MH-8-3	MH-6-2A	24.	Clay	149.2	1.	Buried manhole (MH-8-2A); bottom of pipe missing with water infiltration at 10:00 on opposite wall, above pipe to MH-8-2.	83	1-14.30
MH-8-7	MH-6-8	36	Clay	107.5	1.	Pipe collapsed/broke at 12:00 to the next joint (approximately 3 feet).	96	0-38.00
LATE	RAL 6A	1						
MH-6A-5	MH-6A-7	24	Clay	88,5	1.	Break in top of pipe from 10:00 to 4:00; there is hard material above the break, no soil visible	79	0-40.29
LATE	RAL 6D							
MH-6D-1	MH-6D-2	12	RCP	103.9	1.	Hole in right side of pipe due to well boring drill	94	0-32.20
LATE	RAL SE							
MH-6E-1	MH-5C-1	36x42	RCP	234.2	1.	Hole at 12:00 covered with wood	17	0-35.25
MH-6E-3	CB-6E-6	12	Clay	20.0	1.	Pipe is collapsed	27	0-00.10
MH-6E-9	MH-6E-7	10	RCP	23.1	1.	Severely separated joint, can see back behind joint	21	0-05.12

TABLE 3

EXXON COMPANY, U.S.A. - BAYONNE PLANT SEWER EVALUATION RESULTS ASSESSMENT - MAIN TRUNK #3 SEWER CLEANING INFORMATION FOR FORMER EXXON CHEMICALS PROCESS SEWER

LABORATORY RESULTS FOR WATER DURING FLUSHING OF SYSTEM AFTER CLEANING AND VIDEOTAPING

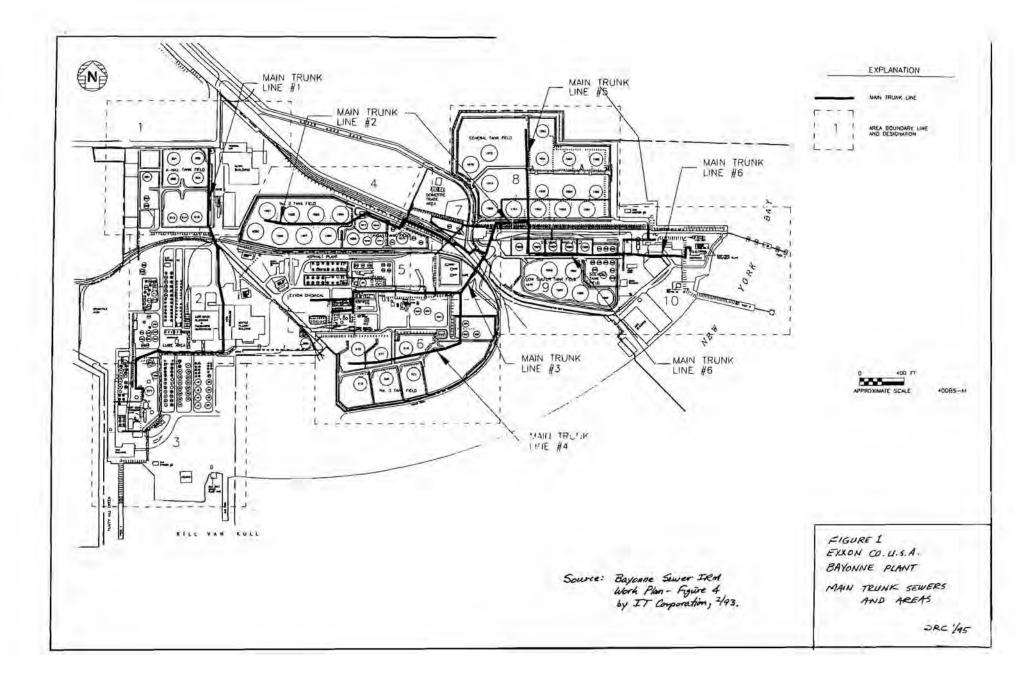
Sample # Location	4 Hydrant	1 Manhole 103	2 Manhole 110	3 Separator
Analyte	Tiyanana		centration	
Lead, mg/l	0.006	0.0084	0.007	0.0086
Zinc,mg/l	0.039	0.025	0.74	0.086
Phenol, mg/l	0.053	0.06	0.06	0.37
Semi-Volatiles, ug/l				
Phenol	ND	ND	ND	J 39
1,2-dichlorobenzene	ND	ND	1000	860
naphthalene	ND	54	J 21	ND
Volatiles, ug/l			1 10 1	
benzene	ND	ND	ND	240
chlorobenzene	ND	ND	110	1400

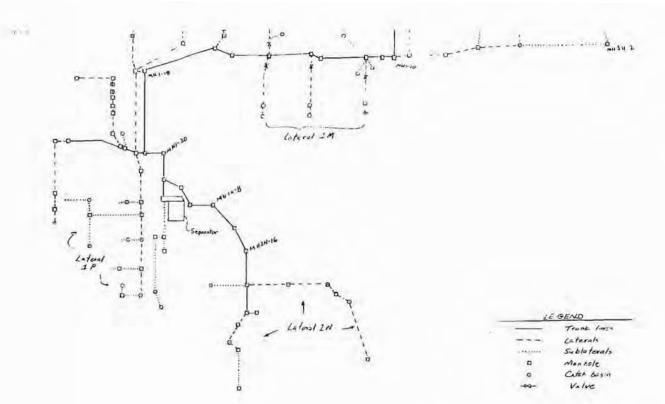
ND - not detected

J - estimated concentration below minimum detection limit

Note - hydrant water from saltwater firewater grid







Notes: 1. Steam conductate collection has

2) Some sublisterals not shown - see maps in work flan and Interim Report.

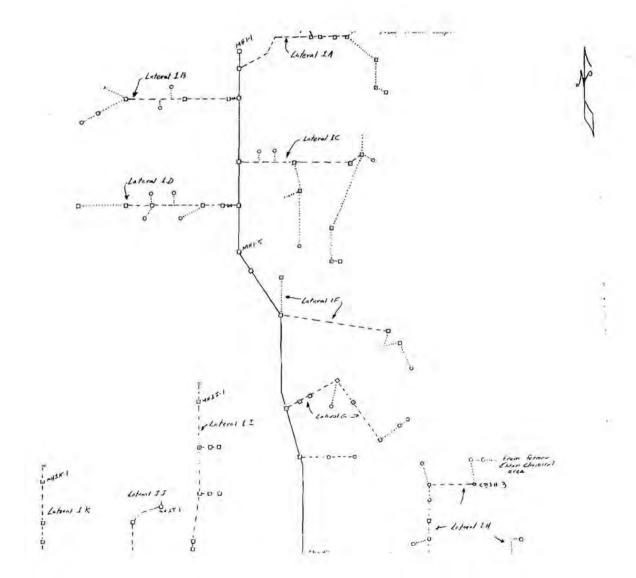
FIGURE 2

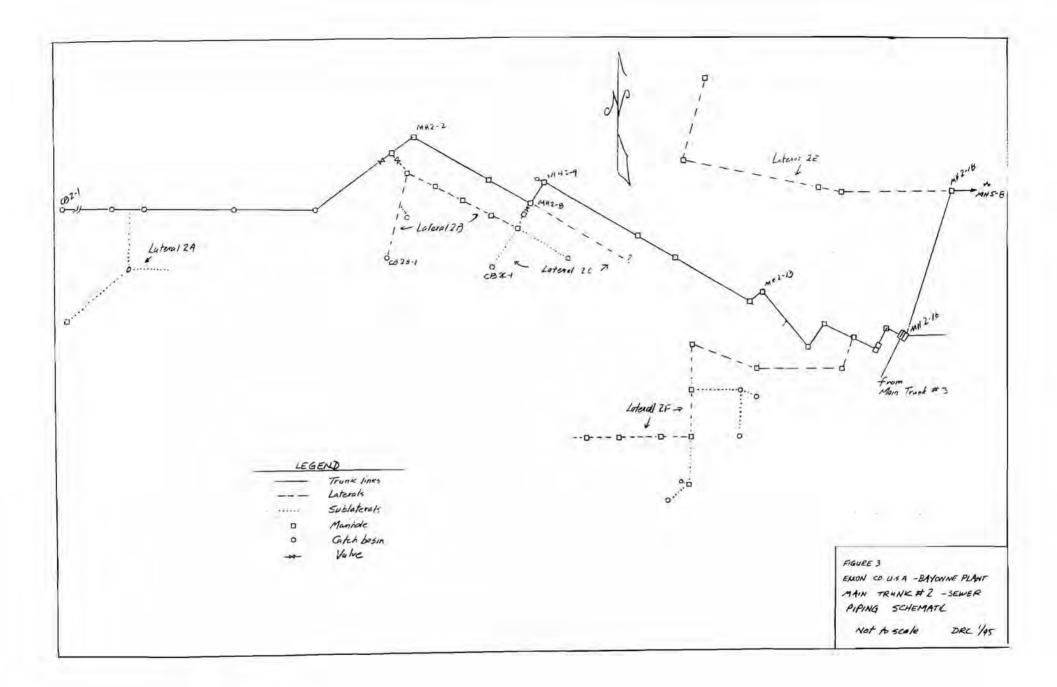
EURON COMPANY, U.S.A. - BAYONNE PLANT
MAIN TRUNK # I

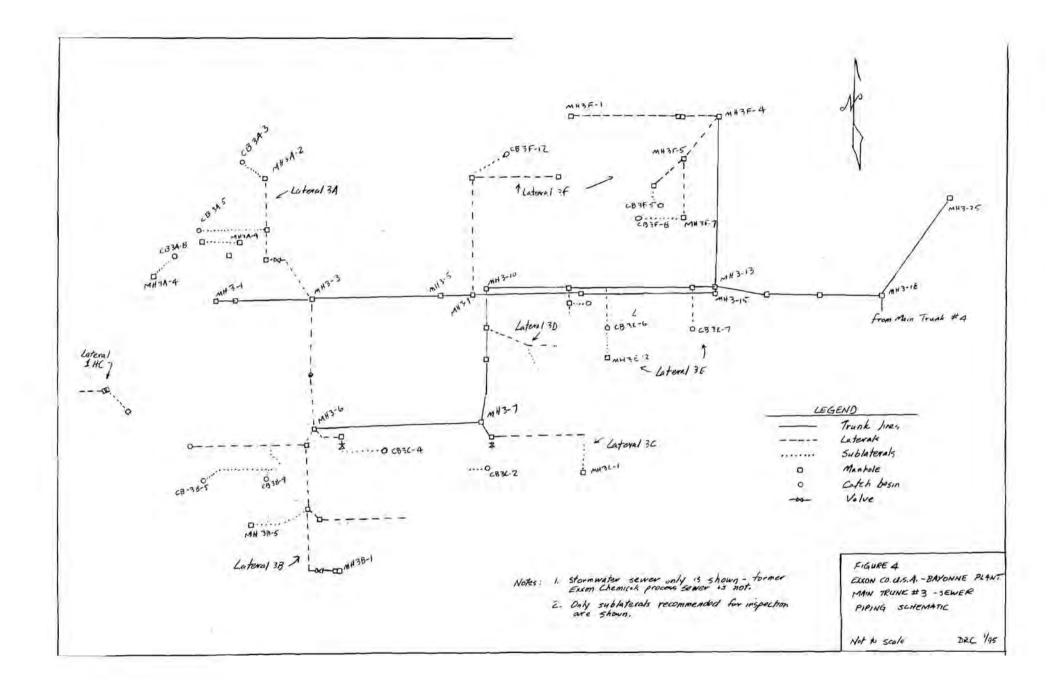
SEWER PIPMG SCHEMATIC

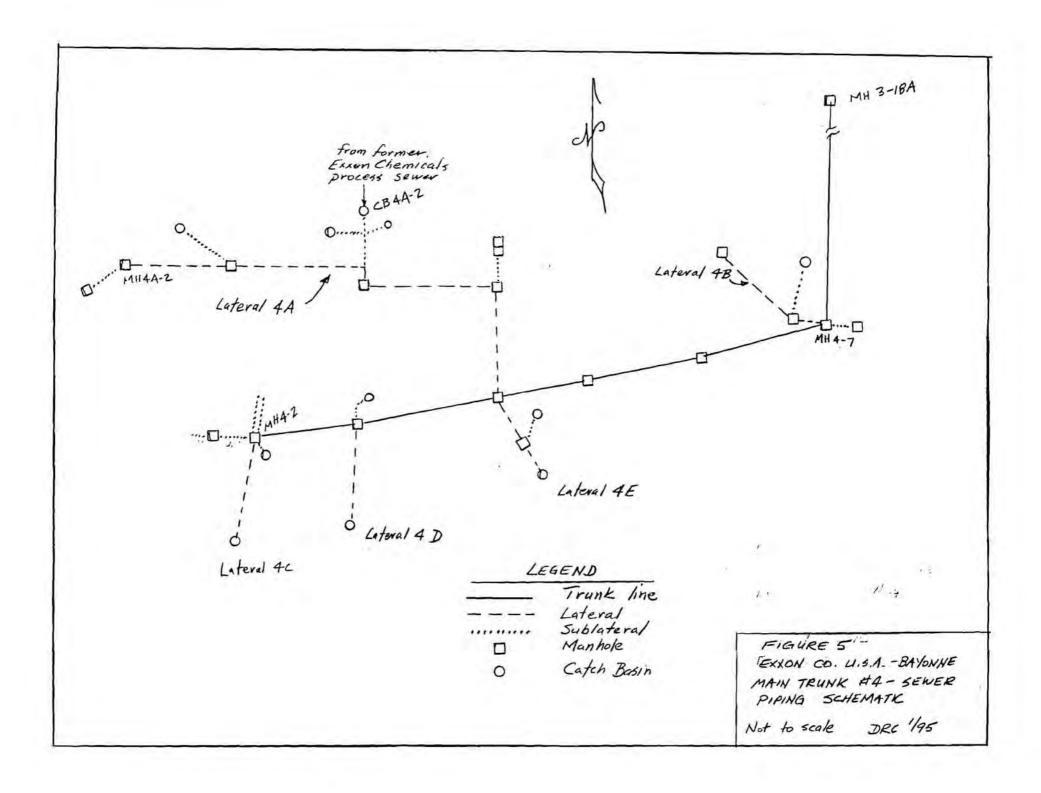
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DRC 1/15









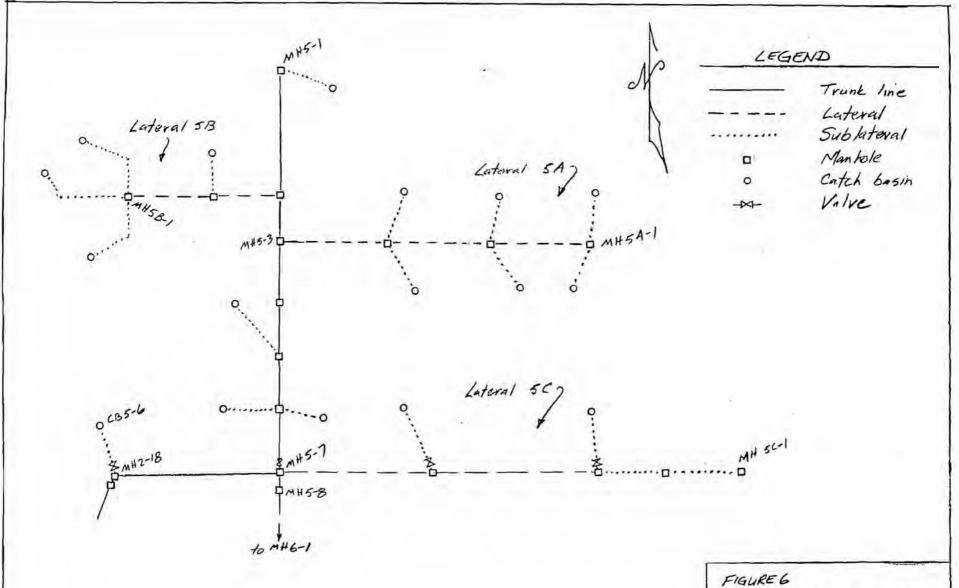
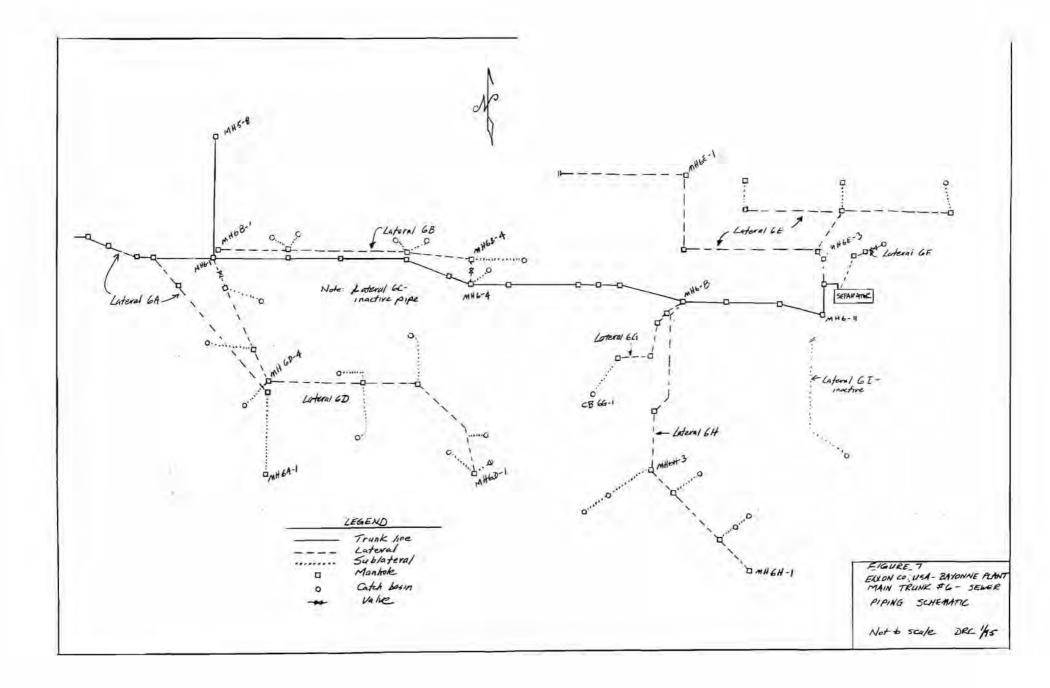


FIGURE 6
EXXIN CO.U.S.A. - BAYONNE
MAIN TRUNK# 5 - SEWER
PIPING SCHEMATIC

Not to scale DRL /45

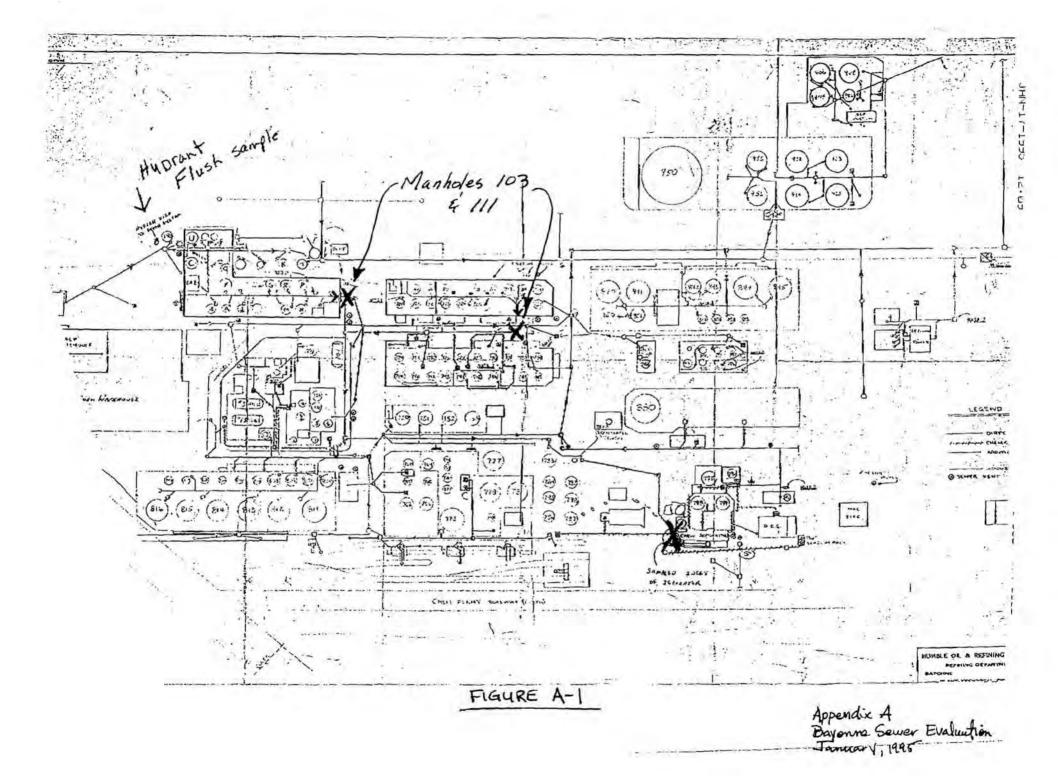


APPENDIX A

EXXON CHEMICALS PROCESS SEWER CLEANING DOCUMENTATION AND RESULTS

Contents

- o Figure A-1 showing sampling locations
- o Analytical Results 35 pages
- o Cleaning contractor information and sludge manifests 13 pages



WWW.THEASTERN ANALYTICAL CORPORATION

REPORT OF RESULTS

lient: EXXON CHEMICAL AMERICAS

AC Job Number 2 931150

ient id: ###HYDRANT23A

Date Sampled: Apr 08, 1993 Date Received: Apr 08, 1993

Lab Sample ID: 931150-004

PARAMETER		RESULT	QUAL	UNITS	500400
Antimony	*	0.01	U	mg/l	
Arsenic	*	0.005	U	mg/l	
Beryllium	*	0.005	U	mg/1	
Cadmium	*	0.003	U	mg/l	
Chromium	*	0.01	U	mg/l	
Copper	*,	0.025	U	mg/l	
Lead	*	0.006		mg/l	
Mercury	*	0.0002	U	mg/l	
Nickel	*	0.04	U	mg/l	
Selenium	*	0.005	U	mg/1	
Silver	*	0.01	U	mg/l	
Thallium	*	0.005	ū	mg/l	
2inc	*	0.039		mg/1	

And I To.	

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er eltents:	5. 美华的1877(187) (2)	ANATYTICA	ENGLISHED TO SERVE	Sugar 38

REPORTS RESIDER

Clent: EXXXX-CHEM	
	CALLAMERICAS Date Sampled: Apr 08, 1993
	THE STATE OF THE S
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- AND STREET STREET, STREET STREET, ST	
CONTRACTOR OF THE PROPERTY OF	
NO CONTRACTOR OF THE PROPERTY	Date Received: Apr 08, 1993
· · · · · · · · · · · · · · · · · · ·	
NAC Job Number: 931750	

Mant ID: MYDRANT20A Lab-Sample 2D: 1901150-004

PARAMETER		RESULT	QUAL	UNITS
Cyanide	(#)	0.01	U	mg/l
Phenol, T	*	0.053		mg/1

REPORT OF RESULTS

Client: EXXON CHEMICAL AMERICAS Date Sampled: Apr 08, 1993
NAC Job Nümber: 931150 Date Received: Apr 08, 1993
Client ID: HYDRANT23A Lab Sample ID: 931150-004

PARAMETER		RESULT	QUAL	UNITS
Beryllium	*	0.005	u	mg/1
Cadmium	*	0.003	U	mg/l
Chromium	*	0.01	Ü	mg/1
Copper	*-	0.025	U	mg/1
Mercury	*	0.0002	Ú	mg/1
Nickel	*	0.04	ū	mg/1
Silver	*	0.01	n	mg/1
Zinc	*	0.039		mg/1

A

NORTHEASTERN ANALYTICAL CORPORATION SEMIVOLATILE UNKNOWN IDENTIFICATION

LAB SAMPLE ID:93L1150-4

DATE EXTRACTED: 04/12/93

SAMPLE WT/VOL: 1000ML/1ML

LAB FILE ID:>83577

DATE ANALYZED: 930415

LEVEL: LOW

COMPOUND

RET TIME

CONC

NONE FOUND

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-4

LAB FILE ID:>B3577

DATE EXTRACTED: 04/12/93

DATE ANALYZED: 930415

SAMPLE WT/VOL: 1000ML/1ML

LEVEL: LOW

CAS NO.		MDL	CONC.UG/L
62-75-9	N-nitrosodimethylamine	10	Ū
108-95-2	Phenol	10	Ū
111-44-4	bis(2-Chloroethyl)ether	10	Ū
95-57-8	2-Chlorophenol	10	Ü
541-73-1	1,3-Dichlorobenzene	10	0 6 6 6
106-46-7	1,4-Dichlorobenzene	10	57
95-50-1	1,2-Dichlorobenzene	io	ŤŤ
39638-32-9	bis(2-Chloroisopropyl)ether	io	, T
521-64-7	N-Nitroso-di-n-propylamine	10	
67-72-1	Hexachloroethane	10	n n
98-95-3	Nitrobenzene		Ü
78-59-1		10	ū
88-75-5	Isophorone	10	U
	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	Ū
111-91-1	bis(-2-Chloroethoxy)Methane	10	, U
120-83-2	2,4-Dichlorophenol	10	U
0-82-1	1,2,4-Trichlorobenzene	10	U
4-20-3	Naphthalene	10	U
37-68-3	Hexachlorobutadiene	10	u u u
59-50-7	4-Chloro-3-methylphenol	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
38-06-2	2,4,6-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
L31-11-3	Dimethylphthalate	10	Ū .
08-96-8	Acenaphthylene	10	Ū
3-32-9	Acenaphthene	10	ŭ
1-28-5	2,4-Dinitrophenol	50	II
00-02-7	4-Nitrophenol	50	11
21-14-2			TT
06-20-2	2,4-Dinitrotoluene	10	n n n
	2,6-Dinitrotoluene	10	Ü
34-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
36-73-7	Fluorene	10	U

U; Not Detected

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-4
DATE EXTRACTED:04/12/93
SAMPLE WT/VOL:1000ML/1ML

LAB FILE ID:>B3577
DATE ANALYZED:930415

CAS NO.		MDL	CONC.UG/I
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	Ú
103-33-3	1.2-diphenylhydrazine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	רמממממממממממממ
87-86-5	Pentachlorophenol	50	U
35-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
34-74-2	Di-n-Butylphthalate	10	U
06-44-0	Fluoranthene	10	Ü
2-87-5	Benzidine	50	Ŭ
29-00-0	Pyrene	10	U
5-68-7	Butylbenzylphthalate	10	U
1-94-1	3,3'-Dichlorobenzidine	20	U
6-55-3	Benzo(a) Anthracene	10	U
17-81-7	Bis(2-Ethylhexyl)Phthalate	10	1 J
78-01-9	Chrysene	10	U
7-84-0	Di-n-octylphthalate	10	U
05-99-2	Benzo(b) fluoranthene	10	Ü
07-08-9	Benzo(k) Fluoranthene	10	U
0-32-8	Benzo(a) Pyrene	10	Ü
93-39-5	Indeno(1,2,3-cd) Pyrene	10	ט ט ט - ט
3-70-3	Dibenzo(a,h)Anthracene	10	Ū
91-24-2	Benzo(g,h,i) Perylene	10	Ū -

^{(1) -} Cannot be separated from Diphenylamine

U; Not Detected

J; below the limits of reliable quantitation

NORTHEASTERN ANALYTICAL CORPORATION VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:931-1150-4

DATE RECEIVED: 04/08/93

SAMPLE WT/VOL: 5. OML

LAB FILE ID:>C9086

DATE ANALYZED: 930415

CAS NO.		!	MDL	CONC. ug/L
74-87-3 74-83-9 75-01-4 75-01-4 75-09-2 107-02-8 107-13-1 75-69-4 75-35-4 75-34-3 107-06-2 71-55-6 56-23-5 75-27-4 78-87-5 10061-01-5 4-48-1 79-00-5 71-43-2 100-75-8 75-25-2 110-75-8 75-25-2 127-18-4 79-34-5	Chloromethane Bromomethane Vinyl Chloride Chloroethane Methylene Chloride Acrolein Acrylonitrile Trichlorofluoromethane 1,1-Dichloroethene 1,1-Dichloroethane Trans-1,2-Dichloroethene Chloroform 1,2-Dichloroethane 1,1,1-Trichloroethane Carbon Tetrachloride Bromodichloromethane 1,2-Dichloropropane cis-1,3-Dichloropropene Trichloroethene Dibromochloromethane 1,1,2-Trichloroethane Benzene trans-1,3-Dichloropropene 2-Chloroethylvinylether Bromoform Tetrachloroethene 1,1,2,2-Tetrachloroethane		00005005555555555555555555555555555555	מממממממממממממממממממממממ ממ
108-88-3 108-90-7 100-41-4	Tólúeńe Chlorobenzene Ethylbenzene	4	555	u u

U; Not Detected

REPORT OF RESULTS

Client: Date Sampled: Apr 08, 1993

NAC Job Number 931150

Date Received: Apr 08, 1993

Client ID: HYDRANT23A

Lab Sample ID: 931150-004

PARAMETER		RESULT	QUAL	UNITS
Aldrin	*1	0.05	U	ug/l
alpha-BHC	*	0.05	U	ug/l
beta-BHC	*	0.05	U	ug/1
gamma-BHC	*	0.05	U	ug/1
delta-BHC	*	0.05	U	ug/1
Chlordane	*	0.5	U	ug/1
Dieldrin	*	0.1	U	ug/1
P,P'-DDE	*	0.1	U	ug/1
P,P'-DDT	*	0.1	U	ug/l
P,P'-DDD	*	0.1	U	ug/1
Endosulfan I	*-	0.05	U	ug/1
Endosulfan II	*-	0.1	U	ug/1
Endosulfan Sulfate	*	0.1	U	ug/1
Endrin	* -	0.1	U	ug/1
Endrin Aldehyde	*	0.05	U	ug/1
Heptachlor	*	0.05	U	ug/l
Heptachlor Epoxide	9	0.05	U	ug/1
Toxaphene	*	1	U	ug/l
Aroclor 1016	*	1	U	ug/1
Aroclor 1221	*	2	U	ug/1
Aroclor 1232	.*	1	U	ug/l
Aroclor 1242	*	1	U	ug/l
Aroclor 1248	*	1	U	ug/l
Aroclor 1254	*	1	Ü	ug/l
Aroclor 1260	*	1	U	ug/l

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-4

LAB FILE ID:>B3577

DATE EXTRACTED: 04/12/93

DATE ANALYZED:930415

SAMPLE WT/VOL: 1000ML/1ML

LEVEL: LOW

CAS NO.		MDL	CONC.UG/
62-75-9	N-nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	Ŭ
95~57~8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	Ü
95-50-1	1,2-Dichlorobenzene	10	Ū
39638-32-9	bis(2-Chloroisopropyl)ether	10	Ü
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	Ū
98-95-3	Nitrobenzene	10	Ū
78-59-1	Isophorone	10	Ŭ
88-75-5	2-Nitrophenol	10	Ŭ
105-67-9	2,4-Dimethylphenol	10	Ŭ
111-91-1	bis(-2-Chloroethoxy) Methane	10	Ü
20-83-2	2,4-Dichlorophenol	10	Ü
20-82-1	1,2,4-Trichlorobenzene	10	ŭ
91-20-3	Naphthalene	10	Ü
87-68-3	Hexachlorobutadiene	10	Ü
59-50-7	4-Chloro-3-methylphenol	10	ŭ
77-47-4	Heyach anomal anomadiana		
8-06-2	Hexachlorocyclopentadiene	10	Ü
91-58-7	2,4,6-Trichlorophenol	10	ū
131-11-3	2-Chloronaphthalene	10	ū
208-96-8	Dimethylphthalate	10	ū
	Acenaphthylene	10	n n
3-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
121-14-2	2,4-Dinitrotoluene	10	U
06-20-2	2,6-Dinitrotoluene	10	U
34-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
36-73-7	Fluorene	10	n

U; Not Detected

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-4

LAB FILE ID:>B3577

DATE EXTRACTED: 04/12/93

DATE ANALYZED: 930415

SAMPLE WT/VOL: 1000ML/1ML

CAS NO.	1	4		MDL	CONC.UG/L
534-52-1	4,6-Dinitro-2-methylphenol	W.		50	ט
86-30-6	N-Nitrosodiphenylamine (1)			10	Ū
103-33-3	1,2-diphenylhydrazine	10.1		10	Ū
101-55-3	4-Bromophenyl-phenylether			10	TI.
118-74-1	Hexachlorobenzene			10	TI.
87-86-5	Pentachlorophenol			50	TT
85-01-8	Phenanthrene	1		10	II
120-12-7	Anthracene			10	ŭ
84-74-2	Di-n-Butylphthalate			10	מממממממממ
206-44-0	Fluoranthene			10	Ū
92-87-5	Benzidine			50	Ü
129-00-0	Pyrene			10	11
85-68-7	Butylbenzylphthalate			10	Ü
91-94-1	Butylbenzylphthalate 3,3'-Dichlorobenzidine			20	u u
56-55-3	Benzo(a) Anthracene			10	Ü
117-81-7	Bis(2-Ethylhexyl) Phthalate			10	1 3
118-01-9	Chrysene			10	ם ה
-117-84-0	Di-n-octylphthalate			10	U
205-99-2	Benzo(b) fluoranthene			10	Ü
207-08-9	Benzo(k) Fluoranthene			10	U
50-32-8	Benzo(a) Pyrene			10	Ū
193-39-5	Indeno(1,2,3-cd)Pyrene			10	U
53-70-3	Dibenzo(a,h)Anthracene		7	10	מממממ
191-24-2	Benzo(g,h,i)Perylene			10	Ü

^{(1) -} Cannot be separated from Diphenylamine

U; Not Detected

J; below the limits of reliable quantitation

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NORTHEASTERN ANALYTICAL CORPORATION SEMIVULATILE UNKNOWN IDENTIFICATION

LAB SAMPLE ID:93L1150-4

LAB FILE ID:>83577

DATE EXTRACTED: 04/12/93

DATE ANALYZED: 930415

SAMPLE WT/VOL: 1000ML/1ML

LEVEL: LOW

COMPOUND

RET TIME

CONC

NONE FOUND

HORTERASTERNSANALYTECAL CORPORATION

REPORT OF RESULTS

Client: Date sampled: Apr 08, 1993

Date Received: Apr 08, 1993 Lab Sample TD: 931150-001 NAC Job Number: 931150

Client ID: MANHOLE103

PARAMETER			RESULT	QUAL	UNITS
Antimony		*	0.01	U	mg/l
Arsenic		*	0.005	U	mg/l
Beryllium	1	*	0.005	u	mg/l
Cadmium		*	0.003	U	mg/l
Chromium		*	0.01	U	mg/l
Copper	1	*	0.025	u	mg/l
Lead	1	*	0.0084		mg/1
Mercury		*	0.0002	U	mg/l
Nickel		*	0.04	U	mg/l
Selenium		*	0.005	U	mg/l
Silver		*	0.01	U	mg/l
Thallium		*	0.005	U	mg/1
Zinc		*	0.025		mg/1

3,3002718793****10:02	3 A 82 42 22 2	The second of the		ALTERNATION	e de la company	P401210027008
	-	1	,			
	POSTREAST	ERN ANALYTE	CAL CO	PORATTON		
		REPORT OF R	esults	7.29		4.41 (1974) - 1774 1774 1774 1774
Client:	EXXON CHEMICA	EFAMERICAS		Date S	ampled:	Apr 08, 1993
NACIUOD Numbers	,951150			Date R	eceived:	Apr 08, 1993
Client ID:	MANHOTE103			Lab Sa	mple ID:	931150-001
				100017410		
	PARAMETER			RESULT	QUAL	UNITS
Cyani	de		*	0.01	n.	mg/l

Phenol, T

OK GZ

0.06

REPORT OF RESULTS

Client: EXXON CHEMICAL AMERICAS Date Sampled: Apr 08, 1993

Date Received: Apr 08, 1993 NAC Job Number: 931150 : :-. Lah Sample ID: 931150-001 Client ID: MANHODEID3

PARAMETER		RESULT	QUAL	UNITS
Beryllium	*	0.005	U	mg/l
Cadmium	* ⁽¹⁾	0.003	U	mg/l
Chromium	*	0.01	U	mg/1
Copper	· •	0.025	U	mg/1
Mercury	*	0.0002	U	mg/1
Nickel	*	0.04	U	mg/l
Silver		0.01	U	mg/l
Zinc		0.025		mg/1

REPORT OF RESULTS Ciffent: EXXON CHEMICAL AMERICAS Date Sampled: Apr 08, 1993 Date Received: Apr 08, 1993 NAG Job Numbert 931150

Client ID: MANHOLETGS Lab Sample ID: 931150-001

PARAMETER		RESULT	QUAL	UNITS	(w6300)
Aldrin	*	0.05	U	ug/l	
alpha-BHC	*	0.05	U	ug/1	
beta-BHC	*	0.05	U	ug/l	
gamma-BHC	*	0.05	U	ug/l	
delta-BHC	*	0.05	U	ug/1	
Chlordane	*	0.5	U	ug/l	
Dieldrin	*	0.1	U.	ug/1	
P,P'-DDE	*1	0.1	U	ug/l	
P,P'-DDT	*	0.1	U	ug/1	
P,P'-DDD	*	0.1	Ü	ug/l	
Endosulfan I	*	0.05	U	ug/1	
Endosulfan II	*	0.1	U	ug/l	
Endosulfan Sulfate	*	0.1		ug/1	
Endrin	*	0.1	U	ug/1	
Endrin Aldehyde	*	0.05	U	ug/1	
Heptachlor	*	0.05	U	ug/1	
Heptachlor Epoxide	*	0.05	U	ug/1	
Toxaphene	*	1	U	ug/1	
Aroclor 1016	*	1	U	ug/1	
Aroclor 1221	*	2	U	ug/1	
Aroclor 1232	*	1	U	ug/1	
Aroclor 1242	* .	1	U	ug/l	
Aroclor 1248	*	1	U	ug/1	
Aroclor 1254	*	1	U	ug/1	
Aroclor 1260	*	1	U	ug/1	

REPORT OF RESULTS

Client: EXXON-CHEMICAL AMERICAS. Date Sampled: Apr 08, 1983
NAC Job Number: Siliso Date Received: Apr 08, 1993
Client ID: MANHOLE103; Lab Sample ID: 931150-001

PARAMETER		RESULT	QUAL	UNITS
Beryllium	*	0.005	n	mg/1
Cadmium	*	0.003	U	mg/l
Chromium	*	0.01	U	mg/1
Copper	*	0.025	Ü	mg/1
Mercury	*	0.0002	U	mg/1
Nickel	*	0.04	n	mg/1
Silver	*	0.01	U	mg/l
Tine	*	0.025		mg/1



NORTHEASTERN ANALYTICAL CORPORATION SEMIVOLATILE UNKNOWN IDENTIFICATION

AB SAMPLE ID:93L1150-1

LAB FILE ID:>B3574

DATE EXTRACTED: 04/12/93

DATE ANALYZED: 930415

SAMPLE WT/VOL:1000ML/1ML

COMPOUND	1	RET TIME	CONC	
16.Unknown		15.22	32UG/L	J
17.Unknown	1	15.36	9UG/L	J
18.Unknown	4	15.97	11UG/L	J
19.Unknown	1	16.35	14UG/L	J
20.Unknown	1	16.42	14UG/L	J
21.Unknown		16.50	16UG/L	J
22.Unknown	4.	16.74	16UG/L	J
23.Unknown	1	16.81	8UG/L	J
24.Unknown	4.	16.93	9UG/L	J
25.Unknown	Y.	25.95	23UG/L	J

J; Estimated Concentration

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-1

LAB FILE ID:>B3574

DATE EXTRACTED: 04/12/93

DATE ANALYZED: 930415

SAMPLE WT/VOL: 1000ML/1ML

CAS NO.	*	±	MDL	CONC.UG/L
534-52-1	4,6-Dinitro-2-methylphenol	(-)	50	υ
86-30-6	N-Nitrosodiphenylamine (1)		10	U
103-33-3	1,2-diphenylhydrazine	Ē	10	Ū
101-55-3	4-Bromophenyl-phenylether	1	10	ם ט
118-74-1	Hexachlorobenzene		10	U
87-86-5	Pentachlorophenol	8	50	U
85-01-8	Phenanthrene		10	U
120-12-7	Anthracene	2.6	10	U
84-74-2	Di-n-Butylphthalate	3	10	ם ם ט
206-44-0	Fluoranthene	T.	10	U
92-87-5	Benzidine	a .	50	Ŭ 7 J
129-00-0	Pyrene	g.	10	II.
85-68-7	Butylbenzylphthalate	-	10	u u
91-94-1	3,37-Dichlorobenzidine		20	ŤŤ
56-55-3	Benzo(a) Anthracene	Χ.	10	Ŭ
17-81-7	Bis(2-Ethylhexyl)Phthalate	4	10	3 J
218-01-9	Chrysene	4	10	3 J U
117-84-0	Di-n-octylphthalate	1	10	ŭ
205-99-2	Benzo(b) fluoranthene	ů.	10	ĬĬ
207-08-9	Benzo(k) Fluoranthene		iŏ	Ü
50-32-8	Benzo(a) Pyrene	İ	ĩŏ	Ü
193-39-5	Indeno(1,2,3-cd) Pyrene	*	io	Ŭ
53-70-3	Dibenzo(a,h) Anthracene		10	ŭ
191-24-2	Benzo(g,h,i) Perylene		10	ŭ

^{(1) -} Cannot be separated from Diphenylamine

U; Not Detected

J; below the limits of reliable quantitation

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-1

LAB FILE ID:>B3574

DATE EXTRACTED: 04/12/93

DATE ANALYZED:930415

SAMPLE WT/VOL: 1000ML/1ML

CAS NO.		MDL	CONC.UG/L
62-75-9	N-nitrosodimethylamine	10	n n
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	บ บ บ 9 J บ
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	9 J
39638-32-9	bis(2-Chloroisopropyl)ether	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	IJ
67-72-1	Hexachloroethane	10	ŭ
98-95-3	Nitrobenzene	10	ŭ
78-59-1	Isophorone	ĩo	Ü
88-75-5	2-Nitrophenol	10	ŭ
105-67-9	2,4-Dimethylphenol	10	Ü
111-91-1	bis(-2-Chloroethoxy) Methane	10	ŭ
20-83-2	2,4-Dichlorophenol	10	Ŭ
±20-82-1	1,2,4-Trichlorobenzene	10	Ŭ
91-20-3	Naphthalene	10	54
87-68-3	Hexachlorobutadiene	10	Ŭ
59-50-7	4-Chloro-3-methylphenol	10	Ŭ
77-47-4	Hexachlorocyclopentadiene	10	71
88-06-2	2,4,6-Trichlorophenol	10	Ü
91-58-7	2-Chloronaphthalene		ŭ
131-11-3	Dimothylabthalate	10	Ų.
208-96-8	Dimethylphthalate	10	Ŭ.
83-32-9	Acenaphthylene Acenaphthene	10	ŭ
51-28-5	Acenaphenene	10	ū
100-02-7	2,4-Dinitrophenol	50	U
	4-Nitrophenol	50	Ŭ
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U

U; Not Detected

J; below the limits of reliable quantitation

NORTHEASTERN ANALYTICAL CORPORATION VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L-1150-1

LAB FILE ID:>C9069

DATE RECEIVED: 04/08/93

DATE ANALYZED: 930414

SAMPLE WT/VOL:5ML

CAS NO.		MDL	CONC. ug/L
74-87-3 74-83-9 75-01-4 75-09-2 107-13-1 75-69-4 75-35-4 75-34-3 156-60-3 107-60-2 107-13-1 75-34-3 156-60-3 107-06-3 107-60-6 71-55-6 71-55-6 75-27-4 78-87-5 10061-01-5 79-048-1 71-061-02-6 79-048-5 10061-02-6 79-348-5 108-89-3 108-90-4	Chloromethane Bromomethane Vinyl Chloride Chloroethane Methylene Chloride Acrolein Acrylonitrile Trichlorofluoromethane 1,1-Dichloroethane Trans-1,2-Dichloroethene Chloroform 1,2-Dichloroethane 1,1,1-Trichloroethane carbon Tetrachloride Bromodichloromethane 1,2-Dichloropropane cis-1,3-Dichloropropene Trichloroethene Dibromochloromethane 1,1,2-Trichloroethane Benzene trans-1,3-Dichloropropene 2-Chloroethylvinylether Bromoform Tetrachloroethene 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene	11111 22	ממממממממממממממממממממממממ

U; Not Detected

NORTHEASTERN ANALYTICAL CORPORATION REPORT OF RESULTS.

Client: EXXON CHEMICAL AMERICAS Date: Sampled:Apr. U8, 1993
Client: EXXON CHEMICAL AMERICAS Date Sampled: Apr 08, 1993
The state of the s
NAC Job Number: 931150 Date Received: Apr 08, 1993
The second secon
Client ID: MANHOLELLI Lab Sample ID: 931150-002

PARAMETER	7		RESULT	QUAL	UNITS	(case)
Antimony	1	*	0.01	U	mg/1	
Arsenic		*	0.005	Ü	mg/l	
Beryllium	3	*	0.005	u	mg/l	
Cadmium	1	*	0.003	U	mg/l	
Chromium	0	*	0.01	U	mg/l	
Copper		*	0.025	U	mg/1	
Lead	Ý	*	0.007		mg/l	
Mercury		*	0.0002	U	mg/1	
Nickel		*	0.04	U	mg/1	
Selenium		*	0.005	U	mg/l	
Silver	1	*	0.01	U	mg/1	
Thallium		*	0.005	π	mg/l	
Zina	Ţ.	4	0.74		mer/T	

*** MONTHEASTERN ANALYTICAL CORPORATION REPORT OF RESULTS

Client: EXXON CHEMICAL MAMERICAS Date Sampled: Apr US, 1993

Cilent ID: MANHOLELL L. Lake Sample ID: 931150-002

PARAMETER		RESULT	QUAL	UNITS	assc
Cyanide	*	0.01	U	mg/l	
Phenol,T	*	0.06		mg/l	

REPORT OF RESULTS

Client: EXXON CHEMICAL AMERICAS Date Sampled: TApr 08, 1993

NAC Job Number: 931150

Client ID: MANHOLEIII

Date Received: Apr 08, 1993

Lab Sample ID: 931150=002

PARAMETER	200 200 200 100 100 100 100 100 100 100	RESULT	QUAL	UNITS	***************************************
Beryllium	*	0.005	Ü	mg/l	
Cadmium	*	0.003	u	mg/l	
Chromium	*	0.01	U	mg/l	
Copper	à	0.025	U	mg/l	
Mercury	*	0.0002	U	mg/l	
Nickel	*	0.04	u	mg/1	
Silver	*	0.01	U	mg/l	
Zinc	(*)	0.74		mg/l	

REPORT OF RESULTS

	A death of the control of the contro	
A CONTRACTOR OF THE PROPERTY O	FXXON CHEMICALS.	

Date Sampled: Apr 08, 1993

NAC Job Number: 931150

*Date Received: Apr 08, 1993

Lab Sample ID: 931150-002

Client ID: MANHOLE111

PARAMETER	(Market Service Servic	RESULT	QUAL	UNITS
Aldrin	*	0.05	U	ug/1
alpha-BHC	*	0.05	U	ug/1
beta-BHC	*	0.05	U	ug/I
gamma-BHC	*	0.05	U	ug/1
delta-BHC	*	0.05	U	ug/1
Chlordane	*	0.5	U	ug/1
Dieldrin	*	0.1	U	ug/1
P,P'-DDE	*	0.1	U	ug/1
P,P'-DDT	*	0.1	U	ug/l
P,P'-DDD	*	0.1	Ų	ug/l
Endosulfan I	*	0.05	U	ug/l
Endosulfan II	*	0.1	U	ug/1
Endosulfan Sulfate	*	0.1	U	ug/l
Endrin	*	0.1	U	ug/1
Endrin Aldehyde	*	0.05	U	ug/l
Heptachlor	*	0.05	U	ug/1
Heptachlor Epoxide	*	0.05	U	ug/l
Toxaphene	*	1	U	ug/1
Aroclor 1016	*	1	U	ug/1
Aroclor 1221	*	2	U	ug/1
Aroclor 1232	*	1	U	ug/l
Aroclor 1242	*	1	U	ug/l
Aroclor 1248	*	1	U	ug/1
Aroclor 1254	*	1	U	ug/1
Aroclor 1260	*	1	U	ug/1

NORTHEASTERN ANALYTICAL CORPORATION SEMIVOLATILE UNKNOWN IDENTIFICATION

AB SAMPLE ID:93L1150-2

DATE EXTRACTED: 04/12/93

SAMPLE WT/VOL: 1000ML/1ML

LAB FILE ID:>B3575

DATE ANALYZED: 930415

COMPOUND	RET TIME	CONC	
1.Benzene, chloro-	6.90	51UG/L	J
2.Methyl-Propyl Benzene Isomer	12.17	6UG/L	J
3.Ethyl-Dimethyl Benzene Isomer	12.33	6UG/L	J
4.Unknown Aromatic	12.76	8UG/L	J
5.Unknown Aromatic	12.95	14UG/L	J
6.Unknown	13.33	5UG/L	J
7. Tetramethyl Benzene Isomer	13.61	8UG/L	J
8.Tetramethyl Benzene Isomer	13.72	10UG/L	J
9.Unknown Aromatic	14.38	11UG/L	J
LO.Unknown	18.86	8UG/L	J
.Unknown	20.98	28UG/L	J
12.Unknown	25.94	11UG/L	J
13.Unknown	31.58	12UG/L	J
14.Unknown	32.16	99UG/L	J
15.Unknown	34.93	9UG/L	J
16.Unknown	37.53	13UG/L	J
1	1		

J; Estimated Concentration

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-20C

LAB FILE ID:>B3578

DATE EXTRACTED: 04/12/93

DATE ANALYZED:930415

SAMPLE WT/VOL:1000ML/5ML

CAS NO.			MDL	CONC.UG/L
534-52-1	4,6-Dinitro-2-methylphenol	1	250	U
86-30-6	N-Nitrosodiphenylamine (1)		50	Ü
103-33-3	1,2-diphenylhydrazine		50	U
101-55-3	4-Bromophenyl-phenylether		50	ŭ
118-74-1	Hexachlorobenzene		50	U
87-86-5	Pentachlorophenol		250	n n
85-01-8	Phenanthrene	- 1	50	U
120-12-7	Anthracene		50	
84-74-2	Di-n-Butylphthalate		50	Ü
206-44-0	Fluoranthene		50	U
92-87-5	Benzidine		250	ממממממממ
129-00-0	Pyrene		50	Ü
85-68-7	Butylbenzylphthalate		50	Ū
91-94-1	3,3'-Dichlorobenzidine		100	U
56-55-3	Benzo(a) Anthracene		50	U
17-81-7	Bis(2-Ethylhexyl)Phthalate		50	Ŭ
18-01-9	Chrysene		50	Ü
117-84-0	Di-n-octylphthalate		50	Ŭ
205-99-2	Benzo(b) fluoranthene		50	II
207-08-9	Benzo(k) Fluoranthene	1.0	50	Ü
50-32-8	Benzo(a) Pyrene		50	п
193-39-5	Indeno(1,2,3-cd)Pyrene		50	Ť
53-70-3	Dibenzo(a,h)Anthracene		50	. 0
191-24-2	Benzo(g,h,i) Perylene		50	Ŭ

^{(1) -} Cannot be separated from Diphenylamine

U; Not Detected

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-20L

LAB FILE ID:>B3578

DATE EXTRACTED: 04/12/93

DATE ANALYZED: 930415

SAMPLE WT/VOL: 1000ML/5ML

CAS NO.		MDL	CONC.UG/L
62-75-9	N-nitrosodimethylamine	50	U
108-95-2	Phenol	50	Ü
111-44-4	bis(2-Chloroethyl)ether	50	ŭ
95-57-8	2-Chlorophenol	50	U
541-73-1	1,3-Dichlorobenzene	50	U
106-46-7	1,4-Dichlorobenzene	50	U
95-50-1	1,2-Dichlorobenzene	50	1000
39638-32-9	bis(2-Chloroisopropyl)ether	50	U
621-64-7	N-Nitroso-di-n-propylamine	50	U
67-72-1	Hexachloroethane	50	U
98-95-3	Nitrobenzene	50	U
78-59-1	Isophorone	50	II
88-75-5	2-Nitrophenol	50	II
105-67-9	2,4-Dimethylphenol	50	u u
111-91-1	bis (-2-Chloroethoxy) Methane	50	TT
20-83-2	2,4-Dichlorophenol	50	U
120-82-1	1,2,4-Trichlorobenzene	50	ŭ
91-20-3	Naphthalene	50	
87-68-3	Hexachlorobutadiene	50	21 JO
59-50-7			
	4-Chloro-3-methylphenol	50	ñ
77-47-4	Hexachlorocyclopentadiene	50	ŭ
88-06-2	2,4,6-Trichlorophenol	50	ŭ
91-58-7	2-Chloronaphthalene	50	Ü
131-11-3	Dimethylphthalate	50	Ü
208-96-8	Acenaphthylene	50	Ü
83-32-9	Acenaphthene	50	U
51-28-5	2,4-Dinitrophenol	250	U
100-02-7	4-Nitrophenol	250	U
121-14-2	2,4-Dinitrotoluene	50	U
606-20-2	2,6-Dinitrotoluene;	50	U
84-66-2	Diethylphthalate	50	U
7005-72-3	4-Chlorophenyl-phenylether	50	U
86-73-7	Fluorene	50	U

U; Not Detected

J; below the limits of reliable quantitation

^{*} O TUDICATES DICUTION (SEE FICE > 85575)

NORTHEASTERN ANALYTICAL CORPORATION VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L-1150-2

DATE RECEIVED: 04/08/93

SAMPLE WT/VOL: 1ML/5ML

LAB FILE ID:>C9070

DATE ANALYZED: 930414

CAS NO.		MDL	CONC. ug/L
74-87-3 74-83-9 75-01-4 75-09-2 107-02-8 107-03-1 75-69-4 75-35-4 75-34-3 156-60-5 67-66-3 271-55-6 71-55-6 75-27-4 78-87-5 100-1-6 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8 100-75-8	Chloromethane Bromomethane Vinyl Chloride Chloroethane Methylene Chloride Acrolein Acrylonitrile Trichlorofluoromethane 1,1-Dichloroethane Trans-1,2-Dichloroethene Chloroform 1,2-Dichloroethane 1,1-Trichloroethane Carbon Tetrachloride Bromodichloromethane 1,2-Dichloropropane cls-1,3-Dichloropropene Trichloroethene Dibromochloromethane 1,1,2-Trichloroethane 2,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane Benzene trans-1,3-Dichloropropene 2-Chloroethylvinylether Bromoform Tetrachloroethene 1,1,2,2-Tetrachloroethane Toluene Chlorobenzene Ethylbenzene	00005005555555555555555555555555555555	מספפפפפפפפפפפפפפפפפפ

U; Not Detected

REPORT OF RESULTS

A STATE OF THE PARTY OF THE PAR	EXXON CHEMICAL AMERICAS Date Sampled: Apr 08;	38.00
	PAYOUS DITENTON TO SELECT	24257
was a second and the	CAN CO CILIPACAL CANADA	1.3.7.3
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MILES OF THE PROPERTY OF THE P	The state of the s	130000000000000000000000000000000000000
· · · · · · · · · · · · · · · · · · ·		888800000 P
NAC Job Number	931150 Date Received: Apr 08.	1003
	UGLO ACCELVEL. ALL UG.	***
THE RESERVE OF THE PARTY OF THE		A. Maria and Company
		27 S. C.
the last the second at Last Control of the	SEPARATOR: Lab Sample ID: 931150-0	
client ID:		Section 20 Control
		SEC. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15

PARAMETER			RESULT	QUAL	UNITS	
Antimony		*	0.01	U	mg/l	
Arsenic	1	*	0.005	U	mg/l	
Beryllium		*	0.005	Ü	mg/l	
Cadmium		*	0.003	u	mg/l	
Chromium		*	0.01	U	mg/l	
Copper		*	0.025	U	mg/1	
Lead		*	0.0086		mg/l	
Mercury		*	0.0002	u	mg/l	
Nickel		*	0.04	U	mg/I	
Selenium		*	0.005	U	mg/1	
Silver		*	0.01	U	mg/l	
Thallium		*	0.005	U	mg/l	
Zinc		*	0.086		mg/1	

NORTHEASTERN ANALYTECAL CORPORATION. REPORT OF RESULTS Sent: Date Sampled: April08, 1993 Date:Recelved: Apr 08, 1993 AC Job Number: 931150Lab Sample (10; 931150-003 First ID: SEPARATOR UNITS QUAL PARAMETER RESULT U mg/1 Cyanide 0.01 Phenol, T 0.37

REPORT OF RESULTS

Client: Date Sampled: Apr 08, 1993

NAC Job Number: 931150 Date Received: Apr 08, 1991

Client ID: SEPARATOR ** Lab Sample ID: 931150-003

PARAMETER		RESULT	QUAL	UNITS	
Beryllium	*	0.005	U	mg/1	
Cadmium	*	0.003	U	mg/l	
Chromium		0.01	U	mg/l	
Copper	*	0.025	U	mg/l	
Mercury	*	0.0002	U	mg/1	
Nickel		0.04	U	mg/1	
Silver	*	0.01	U	mg/l	
Zinc		0.086		mq/1	

1

REPORT OF RESULPS

Client: EXXON CHEMICAL AMERICAS

Date Sampled: Apr 08, 1993

NAC Job Number: 931150 Client ID: SEPARATOR

Date Received: Apr 08, 1993

Lab Sample ID: 931150-003

PARAMETER		RESULT	QUAL	UNITS	99800
Beryllium	*	0.005	U	mg/l	
Cadmium	*	0.003	U,	mg/1	
Chromium	***	0.01	U	mg/l	
Copper	*!	0.025	U	mg/l	
Mercury	*	0.0002	U	mg/1	
Nickel	*,	0.04	U	mg/I	
Silver	*:	0.01	U	mg/1	
Zinc	*	0.086		mg/l	



NORTHEASTERN ANALYTICAL CORPORATION SEMIVOLATILE UNKNOWN IDENTIFICATION

DATE EXTRACTED: 04/12/93		FILE ID:>B35 E ANALYZED:93	75.0
SAMPLE WT/VOL: 1000ML/3ML		EL:LOW	2.127
COMPOUND	RET TIME	CONC	
16.Unknown	17.33	27UG/L	J
17.0xindole	21.36	28UG/L	J
18.Unknown	22.10	80UG/L	J
19.Unknown	23.75	59UG/L	J
20.Unknown	25.07	28UG/L	J
21.Unknown	25.83	24UG/L	J
22.Unknown	26.09	84UG/L	J
23.Unknown	28.67	34UG/L	J
24.Unknown	29.59	89UG/L	J
25.Unknown	32.17	47UG/L	J

J; Estimated Concentration

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-30L744 PDATE EXTRACTED:04/12/93

SAMPLE WT/VOL:1000ML/10ML

LAB FILE ID:>B3579

DATE ANALYZED: 930415

CAS NO.		MDL	CONC.UG/L
534-52-1	4,6-Dinitro-2-methylphenol	500	U
86-30-6	N-Nitrosodiphenylamine (1)	100	U
103-33-3	1,2-diphenylhydrazine	100	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	100	U
87-86-5 -	Pentachlorophenol	500	ŭ
85-01-8	Phenanthrene	100	Ü
120-12-7	Anthracene	100	U
84-74-2	Di-n-Butylphthalate	100	
206-44-0	Fluoranthene	100	ם מ
92-87-5	Benzidine	500	U
129-00-0	Pyrene	100	U
95-68-7		100	U
1-94-1	Būtylbenzylphthalate 3,3'-Dichlorobenzidine	200	U
56-55-3	Benzo(a) Anthracene	100	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	100	18 JO
218-01-9	Chrysene	100	Ŭ
117-84-0	Di-n-octylphthalate	100	
205-99-2	Benzo(b) fluoranthene	100	ם מ מ
207-08-9	Benzo(k) Fluoranthene	100	TT
50-32-8	Benzo(a) Pyrene	100	U
193-39-5	Indeno(1,2,3-cd) Pyrene	100	п
53-70-3	Dibenzo(a,h)Anthracene	100	Ŭ
191-24-2	Benzo(g,h,i)Perylene	100	Ū

^{(1) -} Cannot be separated from Diphenylamine

U; Not Detected

J; below the limits of reliable quantitation

N & ANALITICAL

NORTHEASTERN ANALYTICAL CORPORATION

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L1150-3DC 7/4 ~

LAB FILE ID:>B3579

DATE EXTRACTED: 04/12/93

DATE ANALYZED:930415

SAMPLE WT/VOL: 1000ML/10ML

CAS NO.		MDL	CONC.UG/L
62-75-9	N-nitrosodimethylamine	100	Ü
108-95-2	Phenol	100	39 JO
111-44-4	bis(2-Chloroethyl)ether	100	Ŭ
95-57-8	2-Chlorophenol	100	U
541-73-1	1,3-Dichlorobenzene	100	U
106-46-7	1,4-Dichlorobenzene	100	U
95-50-1	1,2-Dichlorobenzene	100	860
39638-32-9	bis(2-Chloroisopropyl)ether	100	U
621-64-7	N-Nitroso-di-n-propylamine	100	U
67-72-1	Hexachloroethane	100	U
98-95-3	Nitrobenzene	100	Ū
78-59-1	Isophorone	100	Ū
88-75-5	2-Nitrophenol	100	Ü
105-67-9	2,4-Dimethylphenol	100	Ŭ
111-91-1	bis (-2-Chloroethoxy) Methane	100	Ü
1.20-83-2	2,4-Dichlorophenol	100	Ŭ
-20-82-1	1,2,4-Trichlorobenzene	100	Ü
91-20-3	Naphthalene	100	Ŭ
87-68-3	Hexachlorobutadiene	100	Ŭ
59-50-7	4-Chloro-3-methylphenol	100	n n
77-47-4	Hexachlorocyclopentadiene	100	Ŭ
88-06-2	2,4,6-Trichlorophenol	100	Ũ
91-58-7	2-Chloronaphthalene	100	Ū
131-11-3	Dimethylphthalate	100	Ŭ
208-96-8	Acenaphthylene	100	Ŭ
83-32-9	Acenaphthene	100	ŭ
51-28-5	2,4-Dinitrophenol	500	- Ŭ
100-02-7	4-Nitrophenol	500	บั
121-14-2	2,4-Dinitrotoluene	100	ŭ
606-20-2	2,6-Dinitrotoluene	100	ŭ
84-66-2	Diethylphthalate	100	ŭ
7005-72-3	4-Chlorophenyl-phenylether	100	ŭ
86-73-7	Fluorene	100	ŭ
44.44	ridorene	100	.0

U; Not Detected

J; below the limits of reliable quantitation

^{*} D IUDICATES DICLINOLS UT REDURSED (SEE FILE >38576)

NORTHEASTERN ANALYTICAL CORPORATION VOLATILE ORGANIC ANALYSIS DATA SHEET

LAB SAMPLE ID:93L-1150-3

DATE RECEIVED: 04/08/93

SAMPLE WT/VOL: 0.5ML/5ML

LAB FILE ID:>C9072

DATE ANALYZED:930415

CAS NO.	i		MDL	CONC. ug/L
74-87-3	Chloromethane		100 100 100	ŭ
74-83-9	Bromomethane	100	100	daaaaaaaaaaaaaaaaaaaaaaaa
75-01-4	Vinyl Chloride		100	ŭ
75-00-3 75-09-2	Chloroethane		100	Ä
107-02-8	Methylene Chloride		200	¥.
107-13-1	Acrolein		200	ř
75-69-4	Acrylonitrile Trichlorofluoromethane	- 3	50	II
75-35-4	1.1-Dichloroethene		50	Ŭ
75-34-3	1.1-Dichloroethane		50	ŭ
156-60-5	Trans-1.2-Dichloroethene		50	Ū
75-69-4 75-35-4 75-34-3 156-60-5 67-66-3	1,1-Dichloroethene 1,1-Dichloroethane Trans-1,2-Dichloroethene Chloroform		00000000000000000000000000000000000000	U
107-06-2	1-2-Dichioroethane		50	U
71-55-6	1.1.1-Trichloroethane		50	U
56-23-5 75-27-4 78-87-5	Carbon Tetrachloride Bromodichloromethane	131	50	ŭ
75-27-4	Bromodichloromethane		50	ū
10061-01-5	1.2-Dichloropropane cis-1,3-Dichloropropene Trichloroethene		50	Ę.
0061-01-5	Cis-1, 3-Dichioropropene	2	50	Ö
4-48-1	Dibromochloroethone		50	H
79-00-5	Dibromochloromethane 1,1,2-Trichloroethane	13	50	
71-43-2	Benzene		50	240
10061-02-6	trans-1,3-Dichloropropene	15	50	Ü
110-75-8	2-Chloroethylvinylether		100	Ū
75-25-2	Bromoform		50	n n n
27-18-4 79-34-5	Tetrachloroethene		50	U
79-34-5	1,1,2,2-Tetrachloroethane	9	50	n
08-88-3	Toluene	1	100 500 500 500	
108-90-7	Chlorobenzene		50	1400
100-41-4	Ethylbenzene		50	Ü

U; Not Detected

NORTHEASTERN ANALYTICAL CORPORATION SEMIVOLATILE UNKNOWN IDENTIFICATION

AB SAMPLE ID:93L1150-3

LAB FILE ID:>B3576

DATE EXTRACTED: 04/12/93

DATE ANALYZED:930415

SAMPLE WT/VOL: 1000ML/3ML

COMPOUND		8	RET TIME	CONC	
16.Unknown	¥	No second	17.33	27UG/L	J
17.0xindole		1	21.36	28UG/L	J
18.Unknown		1	22.10	80UG/L	J
19.Unknown		4	23.75	59UG/L	J
20.Unknown			25.07	28UG/L	J
21.Unknown			25.83	24UG/L	J
22.Unknown			26.09	84UG/L	J
23.Unknown		1	28.67	34UG/L	J
24.Unknown		1	29.59	89UG/L	J
25.Unknown			32.17	47UG/L	J

J; Estimated Concentration



AX (908) 474-7437

PARAMINS

EXXON CHEMICAL COMPANY

division of EXXON CORPORATION

P.O. BOX 636, UNDEN, NEW JERSEY 07736-0636

This purchase order includes all of the terms, conditions and instructions, hereof and attachments hereto.

RELEASE ORDER #: 11002625 (CONTRACT #: 21000068)

PAGE:

DATE: 04/30/93

ENCLEAN INC RD NO 1 BOX 23C ATTN: MARK WILECZEK SWEDESBORO PAULSBORO RD SWEDESBORO, NJ 08085

1 4 com with me 17 meters out

TERMS OF PAYMENT ...: WITHIN 30 DAYS NET.

THIS TIME/MATERIAL RELEASE APPLIES TO EXISTING EXXON CONTRACT AGGA-01989-U-30370) . INVOICES MUST SHOW IN THIS ITEM FORMAT. SERVICES TO BE PROVIDED UNDER THIS RELEASE SHALL NOT EXCEED 180,000.00 PER PROPOSAL FROM BILL PERRY TO RICHARD MILLER WHICH DOES NOT INCLUDE N.J.STATE SALE TAXES. THIS CHANGE IS ISSUED TO EXTEND PERIOD TO 4-30-93.

DELIV.DT ITEM QTY. UNIT PRICE PER UNIT TOT PR.

001 05/31/93 80,000.000 STD UN 1.00 80,000.00 SUB-TOTAL

80,000.00 ENCLEAN INC. CHEM CLR LABOR ESTIMATE EXEMPT OF STATE TAX

CHEM CLEANING LABOR PHASE 2 BAYONNE CHEMICAL PLANT INCLUDING D-SEWERS IN TANK FIELDS , EFF.TANKAGE , SEPARATOR AND CHEM SEWERS. ALL WORK AS PER RICHARD MILLER INSTRUCTIONS.

OUR MATERIAL #: 90000378 UNLOADING PT:

ITEM

DELIV.DT QTY. UNIT PRICE PER UNIT TOT PR.

002 05/31/93 90,000.000 STD UN 1.00 90,000.00 SUB-TOTAL 90,000.00 ENCLEAN INC. CHEM CLR EQUIPMENT ESTIMATE EXEMPT OF STATE TAX

(PAGE 2 FOLLOWS)

Buyer's Initials

2

RELEASE ORDER #: 11002625

(CONTRACT #: 21000068)

DATE: 04/30/93

EQUIPMENT COST PHASE 2 BAYONNE CHEMICAL PLANT.

INCLUDES HYD. BLAST, VAC. TKS , SEWER ROTER , SUPER VAC. AND

MIS. EQUIPMENT AS NEEDED . OUR MATERIAL #:

90000379

UNLOADING PT:

ITEM DELIV.DT

QTY. UNIT PRICE PER UNIT TOT PR. USD

003

05/31/93

10,000.000 STD UN

1.00

10,000.00

ENCLEAN INC. CHEM CLR MATERIAL ESTIMATE

SUB-TOTAL ADD STATE TAX 6.000%

10,000.00

MATERIAL FOR PHASE 2 CHEM CLEANING BAYONNE CHEMICAL PLANT AS NEEDED

OUR MATERIAL #: 90000380

UNLOADING PT:

BN

DELIVERY ADDRESS:

BAYWAY REFINERY STOREHOUSE

B NSWICK AND PARK AVENUE

D_.DEN, NJ 07036

INVOICE ADDRESS:

EXXON CHEMICAL COMPANY

O BOX 216

INDEN, NJ 07036-0636

TOTAL VALUE: USD

180,000.00

YOURS SINCERELY,

BUYER:

CHET KUCZYNSKI

908 474 6814

EXXON CHEMICAL COMPANY

CHEMICAL CLEANING FOR MARCH ON T&M

WEEK OF 3/1-3/5

Z CREWS WORKING CHEMICAL SEWERS ALL WEEK.

MANPOWER=8 men 10 hr days

EQUIPMENT=1 fmc unit,1 hydroblaster,2 super vacs

MATERIALS=safety equipment 15\$ per day/man

1 CREW CHEMICAL CLEANING OOS LINES

MANPOWER=4 men 10 hr day

EOUIPMENT=1 cir rig,1 vac truck.

MATERIALS * ppe

Four dumpsters needed 3/1/93 for sludge, 3 spotted at separator and one at 740tk.

Drain sludge from 2nd pocket separator on Monday 3/1.
797 tk must be mted / blanked and opened by 3/5

2ND WEEK 3/8-3/12

Z CREWS WORKING SEWERS I on chemical &1 crew DIRTY HZO SEWERS.

MANPOWER=8 men 10 hr days

EQUIPMENT=same as above

MATERIALS = same as above

I CREW CHEMICAL CLEAN 797 TK /DIVERTING POCKET

MANPOWER=4 men 10 hr days

EOUIPMENT=1 cir rig.1 vac truck .pump ,2 orbajets.Z filters

MATERIALS=ppe filters

2 DUMPSTERS NEEDED spot 1 760 area & 1 789 tk

grating over sewer at 840 tk removed & 3rd pocket separator

3RD WEEK 3/15-3/19

Z CREWS WORKING DIRTY HZO SEWERS & transfer | sludge dumpster

MANPOWER=8 men 10 hr days

EQUIPMENT=same

MATERIALS *Same

need to replace chemical sewer lids

797tk returned to service

798 ,799, 795 mted , blanked by 3/19

4th week 3/22/-3/26

1 CREW SEPARATOR 1 WEEK

MANPOWER=5 men 10 hr days

EQUIPMENT-hyd blaster ,knjet ,super vac with cycle air lock

MATERIALS=kenjet solution, ope

CREW CHEM CLEAN 798 ,795,875 . 799 TKS & SEPARATOR LINES I WEEK

MANPOWER=4 men 10 hr days

EOUIPMENTpump, cir rig , vac , 4 orbajets, 2 filters

MATERIALS=ppe

Z DUMPSTERS NEEDED AT SEPARATOR

Any cleaning solution used this week will be pumped to a t/w

Bureau of Solid & Hazardous Waste Mgt. 2600 Bull Street. Columbia, SC 29201

Phone: (803) 734-5200

Emergency & Holidays: (803)253-6488 PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved OMB No. 2050-0039 Expires 9-30-9 NIFORM HAZARDOUS Manifest Document No 2. Page 1 NJD 045435807 Information in the shaded areas is not required by Federal law, but is by State law WASTE MANIFEST 93006 A. State Manifest Document Number 3 Generator's Name and Mailing Address Exxon Chemical Americas 250 E 22 St. Bayonne, NJ 07002 B. State Generator's ID 201, 858-6783 4. Generator's Phone 5 Transporter 1 Company Name C. State Transporter's ID 6 NJD 000813477 D. Transporter's Phone 9 0 8 5 6 6 - 3 0 0 0 Nappi Trucking 7. Transporter 2 Company Name 8. U.S. EPA ID Number E. State Transporter's ID F. Transporter's Phone 9 Designated Facility Name and Site Address 10 U.S. EPA ID Number Laidlaw Environmental Services of S.C. G. State Facility's ID Route 1 H. Facility's Phone 803 452-5003 Pinewood, SC 29125 SCD 070375985 11. U.S. DOT Description including Proper Shipping Name, Hazard Class, and ID Number) 12 Containers 13. Total Quantity 14. Unit 1. Waste Number No Type 77,77 G P 001 E Sewer / Separator Sludge CM N 2,0,7,20 ER 7 () R J. Additional Descriptions for Materials Listed Above K. Handling Codes for Wastes Listed Above 04473 1 - 1 - 1 - 1 - 1 - 1 - 1 15. Special Handing Instructions and Additional Information Public reporting builden for this collection of information is estimated to Public reporting burden for this collection of information is estimated to average 37 minutes for generators. 15 minutes for transporters, and 10 minutes to treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing tree form. Send comments regarding the burden estimate including suggestions for reducing this burden to Chief Information Polici, Branch PM-223, U.S. Environmental Protection Agency, 401 MS; S. V. Washington O.C. 20460, and to the Office of Information and Regulator, Affairs. Office of Management and Budget, Washington O.C. 20503. Work Order Number 169339 Non-hazardous under RCRA Emergency Telephone - Chemtrec 800 424-9300 GENERATOR'S CERTIFICATION: Thereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina If I am a large quantity generator. I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford Printed/Typed Name Day Year Signature falm Dennis Palmese 0.3.15 17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name Month Day ,Year 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Signature Month Day Discrepancy Indication Space Load would not completely off 40-1-H load. Return Balance to Generator. 20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name Signature Wende Elliots





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(Form designed for use on elite (12-pitch) typewriter) Manifest Document No. UNIFORM HAZARDOUS 2. Page NJD 045435807 Information in the shaded areas is not WASTE MANIFEST required by Federal law, but is by State law 930071 3. Generator's Name and Mailing Address Exxon Chemical Americas A. State Manifest Document Number 250 E 22 St. Bayonne, NJ 07002 B. State Generator's ID 201, 858-6783 4. Generator's Phone (5. Transporter I Company Name C. State Transporter's ID 6 NJ 6 00081347 Nappi Trucking Corp. D. Transporter's Phone 908 566-3000 7. Transporter 2 Company Name 8. U.S. EPA ID Number E. State Transporter's ID F. Transporter's Phone 9. Designated Facility Name and Site Address 10. U.S. EPA ID Number Laidlaw Environmental Services of S.C. G State Facility's ID Route 1 H. Faculty's Phone 803 452-5003 Pinewood, SC 29125 11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number) 12 Containers 13 Total Quantity 14 Unit I. Waste Number No Type 73 VM 7777 G Sewer / Separator Sludge 001 P CM 2,9,3,80 N E. 13 O 151 11 1111 J. Additional Descriptions for Materials Listed Above K Handling Codes for Wastes Listed Above 04473 5101 Public reporting burden for this collection of information is estimated to average 37 minutes for generators 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time 15. Special Handing Instructions and Additional Information Work Order Number 169340 minutes for treatment storage and disposal facilities. This includes smell for remeiving instructions, gathering data and completing and remeiving the form. Send comments regarding the burden stimate, including suggestions for reducing this burden to Chief Information Policies of Branch Pil 721 U.S. Environmental Protection Agency, 400 M.S. SW Washington D.C. 20460, and to me Office of Information and Regulators Attains, Office of Management and Budget, Washington D.C. 20503. Non-hazardous under RCRA Emergency Telephone - Chemtrec 800 424-9300 GENERATOR'S CERTIFICATION: Thereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified. packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of freatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method mat is available to me and that I can afford Printed/Typed Name Year Signature Dennis Palmese 5,3 17. Transporter 1 Acknowledgement of Receipt of Materials. Printed/Typed Name Signature Day Year) need 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Signature Month Day . Discrepancy Indication Space 20. Facility Owner or Operator, Certification of receipt of hazardous materials covered by this manifest except as noted in Item. Printed/Typed Name Signature Wende Elffott

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WASTE MANIFEST	NJD 045435807	Manifest Pocument No.	Page 1 of			haded areas is n w; but is by State la
3. Generator's Name and Mailing Address	Exxon Chemical Ameri 250 E 22 St.	.cas	A Sta	e Manifest Docum	ent Num	ber
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5. Transporter 1 Company Name	6 US EPAIGNUBET 3 4	77	C. Sta	e Transporter's ID		
Nappi Trucking Corp.	NJD 0008134	1111	D. Tra	nsporter's Phone 9	08	566-3000
7. Transporter 2 Company Name	8. U.S. EPA ID Number			e Transporter's ID		
Zan retribution and toward the second	111111		100	nsporter's Phone		_
Designated Facility Name and Site Address Laidlaw Environmental S Route 1				te Facility's ID		
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1. U.S. DOT Description (including Proper Shippin	ng Name, Hazard Class, and ID Number)	12 Cor No	Type	13 Total Quantity	14. Unit Wi/Vol	Waste Number
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Bureau of Solid & Hazardous Waste Mgt. 2600 Bull Street. Columbia. SC 29201 Phone: (803) 734-5200 Emergency & Holidays: (803)253-6488

Form Approved. OMB No. 2050-0039 Expires 9-30-91 (Form designed for use on elite [12-pitch] typewriter) PLEASE PRINT or TYPE Manifest Occument No. 93010 UNIFORM HAZARDOUS Information in the shaded areas is not required by Federal law, but is by State law. WASTE MANIFEST A. State Manifest Document Number 3. Generator's Name and Mailing Address Exxon Chemical Americas 250 E 22 St. B. State Generator's ID Bayonne, NJ 07002 201, 858-6783 4. Generator's Phone (5. Transporter 1 Company Name C. State Transporter's ID 6 NJD 000813477 D. Transporter's Phone 908 566-3000 Nappi Trucking Corp. 7. Transporter 2 Company Name E. State Transporter's ID 8. U.S. EPA ID Number F. Transporter's Phone of S.C. G. State Facility's ID 9 Designated Facility Name and Site Address Laidlaw Environmental Services Route 1 H. Facility's Phone 803 452-5003 Pinewood, SC 29125 SCD 070375985 12 Containers 13 Total Quantity 14. Unit 11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number) 1. Waste Number No. Type Sewer / Separator Sludge 001 CM Y 0,0,9/ N E b 13 O R c J. Additional Descriptions for Materials Listed Above K. Handling Codes for Wastes Listed Above 04473 Public reporting burden for this cohection of information is estimated to average 37 minutes for generators. 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for renewing instructions, gathering path, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden to Chief Information Policy Branci, PM-223, U.S. Environmental Protection Agency, 401 M.S., S.W. Washington, O.C. 20450, and to the Office of Information and Regulatory Affairs. Office of Management and Budget, Washington, O.C. 20503. 15. Special Handing Instructions and Additional Information Work Order Number 169784 Non-hazardous under RCRA Emergency Telephone - Chemtrec 800 424-9300 GENERATOR'S CERTIFICATION: Thereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina If I am a large quantity generator, I certify that I have a program in place to reduce the volume and loxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can atford. Printed/Typed Name Dennis Palmese 17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name Signature JOSEPH 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Signature Month Day 3. Discrepancy Indication Space 31 27790 plos c1 1 1 1 1 1 105 FACILITY 20. Facility Owner or Operator, Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name Signature -: Ann Springfield

Bureau of Solid & Hazardous Waste Mgt. 2600 Bull Street. Columbia. SC 29201 Phone. (803) 734-5200 Emergency & Holidays (803)253-6488

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Bureau of Solid & Hazardous Waste Mgt. 2600 Bull Street. Columbia. SC 29201 Phone: (803) 734-5200 Emergency & Holidays. (803)253-6488

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Bureau of Solid & Hazardous Waste Mgt. 2600 Bull Street. Columbia. SC 29201 Phone: (803) 734-5200

Emergency & Holidays: (803)253-6488

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Bureau of Solid & Hazardous Waste Mgt 2600 Bull Street, Columbia, SC 29201 Phone: (803) 734-5200

Emergency & Holidays (803)253-6488

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Bureau of Solid & Hazardous Waste Mgt. 2600 Bull Street, Columbia, SC 29201 Phone: (803) 734-5200 Emergency & Holidays: (803)253-6488

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WASTE MANIFEST 1: Generator's U.S. EPA	Documen	1,5	Page 1	required by Fe	n the si	haded areas is not w, but is by State law.
3 Generator's Name and Mailing Address Exxon Chemic	al Americas	-17	A: Stat	te Manifest Docum	ent Num	ber .*
250 East 22m Bayonne, NJ			B. Stat	te Generator's ID	-	- A
4. Generator's Phone201-838-6783	U.S. EPA ID Number	_	C Stat	te Transporter's ID		
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Pinewood, SC 29125 11. U.S. DOT Description (including Proper Shipping Name Hazard Class)	SCD 070375985	12 Cont	-	13 Total Quantity		I. Waste Number
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CE. IFICATEGOF; BOARD OF HEALTH OF the CITY OF LINDEN, NEW-JERSEY, UNITED STATES OF AMERICA



The undersigned, Walter A. Young, President of the Board of Health of the City of Linden, hereby certifies that to the best of his knowledge and belief the following statements concerning ESSO STANDARD OIL COMPANY and its products FLIT / DDT and FLit PARA SUPERFICES, and the other products produced by this concern are true and correct, namely:

- 1. Esso Standard Vil Company, a corporation of the State of Delaware, U.S.A. producing FLIT / DDT, FLIT PARA SUPERFICES and other products, has conducted its laboratories at Bayway, in the City of Dinden, State of New Jersey, U.S.A. since 1927 and still conducts its laboratories there.
- 2. Esso Standard Off Company employs a scientifically trained, technically educated and properly qualified chemist competent to manufacture FLIT / DDT and FLIT PARa SUPERFICES and other products produced by this concern in accordance with its formulae.
- 3. An inspection of the laboratories of Esso Standard Oil Company shows that said laboratories comply with all the sanitary regulations of the State of New Jersey and the City of Linden. The following are the conditions which exist at said Japoratories:
- (a) Said laboratories havean ample and sufficient location, at which location there are hygienic conditions of light, air, potable water, sanitary installations and drains.
- (b) That in said laboratories there are adequate facilities existing and controls exercised to insure that said FLIT and other Esso Standard Oil Company Products meet high and uniformstandards.
 (c) That FLIT / DDT, FLIT PARA SUPERFICES and other products manufactured
- (c) That FLIT / DDT, FLIT PARA SUPERFICES and other products manufactured by Esso Standard Oil Company for export to Costa Rica and elsewhere comply in all respects with the specifications for these same products as marketed in the United States of America.
- (a) That the employees working in said laboratories are free from contagious diseases and are competent to perform their duties under the supervision of the duly qualified chemist referred to heretobefore.

In witness Whereof, I have signed my name as President of the Board of Health and have affixed the seal of the City of Linden, this 26th day of Hargh, 1953.

President of the Board of Health City of Linden State of New Jersey United States of America.

Seal of City of Linden



Exxon Mobil Corporation (NYSE: XOM)

5959 Las Colinas Blvd. Irving, TX 75039-2298 United States (Map)

Phone: 972-444-1000 Fax: 972-444-1350

http://www.exxon.mobil.com Covered by Stuart Hampton

OVERVIEW

It's not necessarily the oil standard, but Exxon Mobil is the world's largest integrated oil company (ahead of BP and Royal Dutch Shell). Exxon Mobil engages in oil and gas exploration, production, supply, transportation, and marketing around the world. It has proved reserves of 22.4 billion barrels of oil equivalent. Exxon Mobil's 45 refineries in 25 countries have a capacity of producing 6.4 million barrels per day. The company supplies refined products to more than 35,000 service stations in about 100 countries that operate under the Exxon, Esso, and Mobil brands. It also provides fuel at 680 airports and 220 ports. Exxon Mobil is also a major petrochemical producer.

KEY INFORMATION

D-U-N-S Number	001213214 Buy a D&B credit report.
Doing Business As	"Exxon" "Exxon Chemical Company" "Exxon Coal & Minerals Company" "Exxon Company International" "Exxon Company U S A"
Company Type	Public - NYSE: XOM Headquarters
Year Of Founding or Change In Control	1882
State of Incorporation	NJ

KEY NUMBERS

Fiscal Year-End	December
2005 Sales (mil.)	\$370,680.0
1-Year Sales Growth	24.4%
2005 Net Income (mil.)	\$36,130.0
1-Year Net Income Growth	42.6%
2005 Employees	83,700
1-Year Employee Growth	(2.6%)
Employees At This Location	400

KEY PEOPLE

Chairman and CEO

SVP and Treasurer

Donald D. (Don) Humphreys

VP Public Affairs

K. P. Cohen

CEOS ON CAMERA

ExxonMobil (XOM) CEO Rex Tillerson (6:21) 03/08/06 5:10PM ET - Rex Tillerson discusses the oil industry.

SIGNIFICANT DEVELOPMENTS

Date

Event

8/04/2005

Top Executive Change

INDUSTRY INFORMATION

Hoover's Industries

Energy & Utilities

Oil & Gas Refining, Marketing & Distribution

Chemicals

Basic and Intermediate Chemical & Petrochemical Manufacturing

Retail

Convenience Stores & Truck Stops

Primary SIC Code

1321: Natural gas liquids

Primary NAICS Code

211112: Natural Gas Liquid Extraction

INDUSTRY WATCH

Goldman Sachs Retail Analyst Adrianne Shapira (3:01) 11/14/06 2:40PM ET - Shapira discusses her outlook for Wal-Mart vs. Target.

TOP COMPETITORS

BP

Chevron

Royal Dutch Shell

RANKINGS/STOCK INDEXES

#1 in FORTUNE 500

S&P 500

Dow Jones Industrials

Dow Jones Global Titans

#1 in FT Global 500

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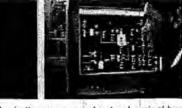
Our Company

About ExxonMobil

> ABOUT EXXONMOBIL History Corporate Governance Our Management Our Activities **Guiding Principles** Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION







Welcome to ExxonMobil, an industry leader in the energy and petrochemical business.

Our organization structure is built on a concept of global businesses and is designed to allow ExxonMobil to compete most effectively in the ever-changing and challenging worldwide energy industry.

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History

An overview of the histories of Exxon and Mobil, starting in the late 19th century.

Our Management

Executive biographies, speeches and interviews.

Guiding Principles

Exxon Mobil Corporation is committed to being the world's premier petroleum and petrochemical company. To that end, our goal is to continuously achieve superior financial and operating results while adhering to the highest standards of business conduct.

Corporate Governance

The Board of Directors has adopted corporate governance guidelines and practices to promote the effective functioning of the Board, its committees and the company.

Our Activities

A review of our activities from the exploration and production of oil and gas to the manufacturing and marketing of fuels, lubes and chemicals.

Financial Highlights

Key financial and operating results as well as links to our major financial publications.

HOME

Worldwide

Products & Services

Our Company

Corporate Citizenship

Our Brands

Your Industry

Search for:



Đ

Our Company

History



History

ExxonMobil History From Kerosene to Gasoline Peace & War New Names, New Challenges Exxon Mobil Today Tiger History Mobil & Pegasus Corporate Governance Our Management Our Activities **Guiding Principles** Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION





D





ExxonMobil History

The corporate entities that would become Exxon and Mobil began the 20th century as components of one company. At the end of the century, they came together as a single premier organization. For most of the years in between, they blazed separate trails as independent, competing enterprises. Each company placed a singular imprint on the energy industry and on a dynamic era of world history.

From Kerosene to Gasoline Peace & War New Names, New Challenges ExxonMobil Today

Mobil & Pegasus

From Ancient Greece to the Age of Industry. Pegasus traveled many roads. In fact, its history with Mobil began on opposite sides of the globe, thanks to two parent companies that were then part of the Standard Oil Trust: the Vacuum Oil Company and the Standard Oil Company of New York (Socony). Click on to read the full story.

Tiger History

Where did the Exxon tiger come from?

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Products & Services

Our Company

Corporate Citizenship

Our Brands

Your Industry

Search for:



Our Company

History







From Kerosene to Gasoline

ABOUT EXXONMOBIL

History

ExxonMobil History
From Kerosene to
Gasoline
Peace & War
New Names, New
Challenges
Exxon Mobil Today
Tiger History
Mobil & Pegasus
Corporate Governance
Our Management
Our Activities
Guiding Principles
Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION



Standard Oil Building

Both Exxon and Mobil trace their roots to the late 19th century, when American industry was booming in numerous sectors - steel, railroads and banking, to name a few. The nation's young petroleum industry picked up the pace, too, to meet the growth in demand for kerosene, lubricants and greases.

John D. Rockefeller acquired a diversity of petroleum interests during that period and, in 1882, organized them under the Standard Oil Trust. That same year marked the incorporation of two refining and marketing organizations — Standard Oil Co. of New Jersey and Standard Oil Co. of New York. "Jersey Standard" and "Socony," as they were commonly known, were the chief predecessor companies of Exxon and Mobil, respectively.

For both companies, the remainder of the century was a time of expansion beyond America's shores. Large "kerosene clippers" enabled overseas shipments of products in bulk quantities. Affiliates and sales offices of the two companies spread across Europe and Asia. Standard Oil's MEI FOO kerosene lamps introduced illumination across China and opened a vast new market.

In 1911, the U.S. Supreme Court ordered the dissolution of the Standard Oil Trust, resulting in the spin-off of 34 companies, including Jersey Standard and Socony. In the same year, the nation's kerosene output was eclipsed for the first time by a formerly discarded byproduct - gasoline. The growing automotive market ultimately inspired the product trademark Mobiloil, registered by Socony in 1920.

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Products & Services

Our Company

Corporate Citizenship

Our Brands

Your Industry

Search for:



Our Company

History







Peace & War

ABOUT EXXONMOBIL

History

ExxonMobil History
From Kerosene to
Gasoline
Peace & War
New Names, New
Challenges
Exxon Mobil Today
Tiger History
Mobil & Pegasus
Corporate Governance
Our Management
Our Activities
Guiding Principles

- Financial Highlights

 > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION



After the Standard Oil breakup, Jersey Standard and Socony separately faced rising competition with fewer resources at their disposal. Neither company was fully integrated. Over the next two decades, each company vigorously built up every segment of its businesses, from production and pipelines to refining and research. They also expanded across the U.S. and abroad.

Big acquisitions and mergers helped: Jersey Standard acquired a 50 percent interest in Humble Oil & Refining Co., a Texas oil producer. Socony purchased a 45 percent interest in Magnolia Petroleum Co., a major refiner, marketer and pipeline transporter. In 1931, Socony merged with Vacuum Oil Co., an industry pioneer dating back to 1866 and a growing Standard Oil spin-off in its own right.

Distribution remained an issue for both companies. In the Asia-Pacific region, Jersey Standard had oil production and refineries in Indonesia but no marketing network. Socony-Vacuum had Asian marketing outlets supplied remotely from California. In 1933, Jersey Standard and Socony-Vacuum merged their interests in the region into a 50-50 joint venture. Standard-Vacuum Oil Co., or "Stanvac," operated in 50 countries, from East Africa to New Zealand, before it was dissolved in 1962.

The spirit of expansion was temporarily interrupted by World War II. Each company beefed up refining output to supply the Allied war effort. Also aiding the cause were new technologies, such as Jersey Standard's groundbreaking process for boosting fuel octane and Socony-Vacuum's synthetic lubricants. Both companies suffered wartime casualties. Tankers and their crews were lost on the high seas. Refineries and other facilities in Europe and Asia were destroyed.

HOME

Worldwide

Products & Services

Our Company Corporate Citizenship

Our Brands

Your Industry

Search for:



Our Company

History







New Names, New Challenges

 ABOUT EXXONMOBIL History

ExxonMobil History
From Kerosene to
Gasoline
Peace & War
New Names, New
Challenges
Exxon Mobil Today
Tiger History
Mobil & Pegasus
Corporate Governance
Our Management
Our Activities
Guiding Principles
Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION



In the post-war years, renewed prosperity in the U.S. and rebuilding in Europe helped put Jersey Standard and Socony-Vacuum firmly back on their global growth tracks. New technologies and growing markets also spurred the development of petrochemicals and an array of derivative products.

Over the next years, ExxonMobil's predecessor companies learned to transform refinery by-products into many basic petrochemicals and numerous derivatives. Since the end of World War II, the two companies have each advanced technologies, expanded business lines and established markets in more than 100 countries.

Mobil Chemical Company was established in 1960. As of 1999, principal products included basic olefins and aromatics, ethylene glycol and polyethylene. The company produced synthetic lube base stocks as well as lube additives, propylene packaging films and catalysts. Manufacturing facilities were located in 10 countries.



Exxon Chemical Company became a worldwide organization in 1965 and in 1999 was a major producer and marketer of olefins, aromatics, polyethylene and polypropylene along with speciality lines such as elastomers, plasticizers, solvents, process fluids, oxo alcohols and adhesive resins. The company was an industry leader in metallocene catalyst technology to make unique polymers with improved performance. Manufacturing facilities were located in 24 countries.

The two chemical companies combined their operations within ExxonMobil Chemical.

In 1955, Socony-Vacuum became Socony Mobil Oil Co. and, in 1966, simply Mobil Oil Corp. A decade later, a newly incorporated Mobil Corporation embraced Mobil Oil as a wholly owned subsidiary. Jersey Standard changed its name to Exxon Corporation in 1972 and established Exxon as an uncontested trademark throughout the United States. In other parts of the world, Exxon and its affiliated companies continued to use its long-time Esso trademark and affiliate name.



In the 1970s, the oil industry and the world were rocked by an Arab oil embargo and by revolution in Iran. Both events triggered disruptions in oil supplies, extreme price hikes, conservation efforts and the development of alternative energy sources. Exxon, Mobil and other companies escalated exploration and development outside the Middle East - in the North Sea, the Gulf of Mexico, Africa and Asia. By the early 1980s, oil was in surplus, and prices fell.

For the remainder of the 20th century, Exxon and Mobil continued to operate in a relatively low-price, low-margin environment. Markets in the United States and Europe matured. Regulations became more stringent. Competitiveness tightened worldwide. Each company continued to advance new technologies, introduce marketing innovations and extend its reach into emerging, high-growth markets. The two companies became more efficient, reduced costs and increased shareholder value.

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Help | Sitemap | Contact Us | Accessibility | Privacy & Legal

HOME

Worldwide

Products & Services

Our Company

Corporate Citizenship

Our Brands

Your Industry

Search for:



Our Company

History



ExxonMobil Today

ABOUT EXXONMOBIL History

ExxonMobil History From Kerosene to Gasoline Peace & War New Names, New Challenges Exxon Mobil Today Tiger History Mobil & Pegasus Corporate Governance Our Management Our Activities **Guiding Principles** Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION



In 1998, Exxon and Mobil signed a definitive agreement to merge and form a new company called Exxon Mobil Corporation. "This merger will enhance our ability to be an effective global competitor in a volatile world economy and in an industry that is more and more competitive," said Lee Raymond and Lou Noto, chairmen and chief executive officers of Exxon and Mobil, respectively. After shareholder and regulatory approvals, the merger was completed November 30, 1999.

HOME

Worldwide

Products & Services

Our Company

Corporate Citizenship

Our Brands Your Industry

Search for:



Our Company

History







Tiger History

 ABOUT EXXONMOBIL History

ExxonMobil History
Tiger History
Mobil & Pegasus
Corporate Governance
Our Management
Our Activities
Guiding Principles
Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION

The first sightings occurred along the roads of Norway in the early 1900s, when leaping tigers graced the emblems of Tiger Benzin gasoline pumps. Why tigers? The reason is lost or forgotten. But a century later, these cast-iron Esso Norway pumps are rare collector items, and the tiger is a symbol of Exxon brand strength and pride known all over the world.

The tiger was spotted next in England in the mid-1930s, when it made its Esso advertising debut as a ferocious, illustrated beast. This tiger was stopped in its tracks by World War II, when gasoline rationing and industry gasoline pools brought a halt to brand advertising.

The Exxon brand tiger returned in 1953 when competitive gasoline marketing resumed. In England and elsewhere in Europe, the powerful cat helped dispel memories of the lower-quality fuels available during the war years.

In 1959, as tiger ads waned in Europe, the tiger came to life in Chicago, Illinois, where an advertising copywriter sat at his typewriter thinking up symbols of power for a local Esso campaign. In two minutes, a famous advertising slogan was born: Put a Tiger in Your Tank.

Unlike his fierce forebears, this tiger emerged as a cartoon character - | friendly, whimsical but still powerful. From his original Chicago habitat, the fun-loving cat eventually roamed Esso ads and promotions throughout the world.

The tiger tail emerged from thousands of gasoline tanks.

Tiger faces and stripes appeared on T-shirts, towels and other trinkets.

Within five years, the tiger was so well known, Time magazine dubbed 1964 "The Year of the Tiger Along Madison Avenue."

In the aftermath of the Arab oil embargo of 1973, the world began to focus on the importance of energy conservation. Esso marketers realized this serious issue deserved a more serious symbol than a cartoon. In 1975, Esso marketers in Britain introduced the first television ad featuring a real tiger "in the fur" to depict strength and reassurance.



Marketing affiliates around the world quickly adopted similar themes, encouraging customers to "Rely on the Tiger," for example.

When Exxon's romance with the tiger began almost a century ago, some 100,000 of these majestic beasts roamed wild and free. Unfortunately, that is no longer the case. Today there are fewer than 7,500 tigers in the wild. In 1995, ExxonMobil joined with the National Fish and Wildlife Foundation to help save the tiger from extinction. Click on Save The Tiger Fund and learn what you can do to help.

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Help | Sitemap | Contact Us | Accessibility | Privacy & Legal

HOME

Worldwide

15

Products & Services

Our Company

Corporate Citizenship

Our Brands Your Industry

Search for:



Our Company

History





Mobil & Pegasus: Timeline

ABOUT EXXONMOBIL

History
ExxonMobil History
Tiger History
Mobil & Pegasus
Corporate Governance
Our Management
Our Activities
Guiding Principles
Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION

-1800s

1911

1920



Pegasus reappears on the world stage as early as the late 19th century, when several members of the Standard Oil Trust begin using the winged horse to identify their fuels in various locations around the world.



After the breakup of the Standard Oil Trust, the newly independent Vacuum Oil Company registers a white image of Pegasus as a trademark for its leading grade of gasoline in Cape Town, South Africa.



Meanwhile, the Standard Oil Company of New York (Socony) uses a red Pegasus to promote its fuels in Japan and Indonesia.

1931

1940

1954



Vacuum and Socony join forces to create the Socony-Vacuum Corporation. To commemorate the merger, a redesigned



Socony-Vacuum products from lubricants to paints are called to active duty with the Allied forces. At home, Pegasus brings a



Socony-Vacuum adopts the brand name Mobil for worldwide use. Pegasus now appears beneath the word "Mobil" in the company Pegasus is commissioned to represent the strength and vitality of the united company worldwide.

message of freedom and technological empowerment to automobile drivers across the country, through frequent appearances in popular magazines.

emblem.

1965



Pegasus is redrawn in its current form, its lines made bolder and its direction reversed. A swift winged steed on a white disk, Pegasus soars into the modern age.

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elp | Sitemap | Contact Us | Accessibility | Privacy & Legal

Products & Services

Our Company

Corporate Citizenship

Our Brands

Your Industry

Search for:



Our Company

Corporate Governance



Corporate Governance

- > ABOUT EXXONMOBIL
- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS

INVESTOR INFORMATION Corporate Governance Shareholder Contacts Shareholder Issues Shareholder Publications Stock Quote Stock Chart Historical Price Lookup Investment Calculator Press Releases **Earnings Events** Dividend Information SEC Filings E-mail Alerts Investor FAQ Dividend Reinvestment Plan Investor Presentations

The Board of Directors of Exxon Mobil Corporation has adopted these corporate governance practices to promote the effective functioning of the Board, its committees and the company. For many years, ExxonMobil has rigorously adhered to policies and practices that guide the way we do

The methods we employ to achieve our results are as important as the results themselves.

Our corporation expects and requires that its directors, officers and employees observe the highest standards of integrity in the conduct of ExxonMobil's business.

Please select your area of interest from the right side menu.



Governance Topics:

Corporate Governance Guidelines **Board of Directors** Powers of the Board **Board Committees** Corporate Officers Additional Policies & Guidelines Certificate of Incorporation By-Laws Code of Ethics and Business Conduct SEC Filings Contact Directors



HOME

Worldwide

Products & Services

Our Company

Corporate Citizenship

Our Brands Your Industry Search for:



Our Company

Our Activities

ABOUT EXXONMOBIL

History

Corporate Governance

Our Management

Our Activities

Exploration

Development

Production Natural Gas and Power

Refining and Supply

Lubricants and Specialties Chemical

Guiding Principles Financial Highlights

- > ENERGY ESSENTIALS
- > NEWS ROOM
- > JOBS & CAREERS
- > INVESTOR INFORMATION

About Exxonitional Our Activities

Our industry faces an enormous challenge to meet the energy needs of a growing world. Increasingly, significant new oil and gas resources are in more remote areas and difficult operating environments. Major Upstream projects are more capital intensive and require substantial financial strength and flexibility. The complexity of the operating environment places greater emphasis on execution excellence. These challenges present ExxonMobil with opportunities to further differentiate each of our businesses.

Exploration

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Development

We explore for oil and natural gas on six of the seven continents. ExxonMobil's Exploration Company is organized to identify, pursue, capture, and evaluate all high-quality exploration opportunities.

Production

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We apply the most cost-effective technology and operations management systems to each and every asset to maximize the commercial recovery of hydrocarbons.

ExxonMobil has a development portfolio of more than 110 projects with potential net investment of more than \$120 billion.

Natural Gas and Power Marketing

We sell natural gas in 25 countries and across five continents in most major gas markets in the world.

We sell high-quality products to millions of

over 35 thousand service stations.

operates in nearly 100 countries and includes

Refining and Supply

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We utilize a highly efficient network of manufacturing facilities and transportation and distribution systems to provide clean fuels, lubricants and other high-value products and feedstocks to our customers around the world.

customers around the globe. Our retails business

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Chemical

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ExxonMobil Chemical is one of the largest worldwide petrochemical companies and is an integrated manufacturer and global marketer of petrochemical products.

Fuels Marketing

Lubricants and Specialties

Anchored by Mobil 1, the world's largest synthetic motor oil, we leverage three strong global brands, Mobil, Exxon and Esso.

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Help | Sitemap | Contact Us | Accessibility | Privacy & Legal

HOME

Worldwide

Products & Services

Our Company

Corporate Citizenship

Our Brands

Your Industry

Search for:



Our Company

Our Activities



■ ABOUT EXXONMOBIL

History

Corporate Governance Our Management Our Activities

> Exploration Development

Production

Natural Gas and Power Refining and Supply

Fuels

Lubricants and Specialties

Chemical **Guiding Principles**

Financial Highlights > ENERGY ESSENTIALS

- > NEWS ROOM
- JOBS & CAREERS
- > INVESTOR INFORMATION

Fuels Marketing

ExxonMobil Fuels Marketing sells high-quality products to millions of customers around the globe. Our retail business operates in nearly 100 countries and includes over 35 thousand service stations. In addition to our retail business, our three business-to-business segments - Industrial and Wholesale, Aviation, and Marine - sell ExxonMobil fuels to over 1. million customers at locations around the world, including nearly 700 airports and over 200 marine ports.

Fuels Marketing provides a stable outlet for our refineries and continues to create long-term value by focusing on the fundamentals of our business; superior safety and environmental performance, disciplined capital management, operating efficiencies from our global scale, and customer focused marketing initiatives and alliances to ensure that our three strong brands, Exxon, Mobil, and Esso, are trusted by consumers around the world.

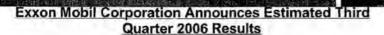
Fuels Marketing utilizes a targeted capital management strategy focused on selective investments, divestments, and asset highgrading to optimize the profitability of our retail chain. We prioritize our focus market investments using sophisticated global tools and models that incorporate factors such as customer demographics and preferences. The majority of our capital is spent on growth initiatives.

Our focused investment decisions are complemented by equally selective divestments, which highgrade our asset base and optimize returns from the business. This disciplined and consistent process has reduced the size of our retail portfolio by over 20 percent since 2000; however, in markets where we have seen the full benefits of a focused market approach, our chain's volumes are 50 percent higher than the industry average.

Global Scale and Integration Deliver Efficiency and Growth Our global scale facilitates the capture of efficiencies through the To learn more, read our Financial & Operating Review worldwide application of innovative technologies, by simplifying and automating work processes, and by centralizing support activities while maintaining our focus on improving customer service. In addition, consistently applied on-site best practices are driving down operating costs at our service stations, airports, and marine ports around the world. In 2005, the combined impact of our efficiency initiatives reduced ongoing operating expenses by over \$150 million. This is particularly important for our retail business as the underlying trend for retail fuels margins continues to decline. The combined benefit of higher efficiencies and growth in nonfuels income from our convenience stores, car washes, and strategic alliances has further reduced the fuels margin we require to breakeven after netting nonfuels income against site operating costs.

Commercial Business

Our three strong commercial businesses – Industrial and Wholesale, Aviation, and Marine – serve growing markets with distinct customer needs. Our global functional organizations, in partnership with Refining and Supply, bring added focus and expertise to ensure we capture the opportunities in this important sector. This has resulted in the continued profitable growth of our base volumes.



IRVING, Texas--(BUSINESS WIRE)--Exxon Mobil Corporation (NYSE:XOM):

	Third C	Quarter		Nine I	Months	
	2006	2005	%	2006	2005	%
Net Income	1			4		
\$ Millions	10,490	9,920	6	29,250	25,420	15
\$ Per Common Share						
Assuming Dilution	1.77	1.58	12	4.86	4.00	22
Special Items						
\$ Millions	0	1,620		0	1,880	
Earnings Excluding Special Items						
\$ Millions	10,490	8,300	26	29,250	23,540	24
\$ Per Common Share	-					
Assuming Dilution	1.77	1.32	34	4.86	3.70	31
Capital and Exploration						
Expenditures - \$ Millions	5,061	4,414		14,786	12,368	

Exxon Mobil Corporation (NYSE:XOM) today reported third quarter net income of \$10,490 million (\$1.77 per share), an increase of \$570 million from the third quarter of 2005. Net income for the first nine months of 2006 was a record at \$29,250 million, up \$3,830 million from 2005.

EXXONMOBIL'S CHAIRMAN REX W. TILLERSON COMMENTED:

"ExxonMobil's third quarter earnings excluding special items were a record \$10,490 million, up 26% from third quarter 2005. Earnings per share excluding special items were up 34% reflecting the impact of the continuing share purchase program. Higher crude oil and natural gas realizations and improved marketing and chemical margins were partly offset by lower refining margins. Net income for the third quarter was up 6% from 2005. Record net income of \$29,250 million (\$4.86 per share) for the first nine months of 2006, increased by 15% versus 2005.

"ExxonMobil continued its active efforts to increase world energy supplies. In the first nine months of 2006, spending on capital and exploration projects was \$14.8 billion, an increase of 20% over 2005. In the third quarter of 2006, the results of our continuing long-term investment program yielded an additional 270 thousand oil-equivalent barrels per day of production, a 7% increase over the third quarter of 2005.

"The Corporation distributed a total of \$8.9 billion to shareholders in the third quarter through dividends and share purchases to reduce shares outstanding, an increase of 30% or \$2.1 billion versus 2005."

THIRD QUARTER HIGHLIGHTS

- Earnings excluding special items were a record \$10,490 million, an increase of 26% or \$2,190 million from the third quarter of 2005.
- Net income was up 6%. There were no special items in third quarter 2006. Third quarter 2005 net income included a special gain of \$1,620 million related to the restructuring of the Corporation's interest in the Dutch

gas transportation business.

- Spending on capital and exploration projects was \$5.1 billion, an increase of 15% versus 2005.
- Cash flow from operations and asset sales was approximately \$15.4 billion, including asset sales of \$0.8 billion.
- Earnings per share excluding special items were \$1.77, an increase of 34%, reflecting strong earnings and the reduction in the number of shares outstanding.
- The multiphase Sakhalin-1 project offshore Russia was commissioned with oil production expected to ramp up to an estimated peak rate of 250,000 barrels a day (gross) by around the end of the year.
- The Nigeria Erha North project started production within 30 months of discovery, and was on budget.
- Transition to new U.S. ultra-low sulfur diesel was successfully completed.

Third Quarter 2006 vs. Third Quarter 2005

Upstream earnings excluding special items were \$6,493 million, up \$764 million from the third quarter of 2005 primarily reflecting higher crude oil and natural gas realizations.

On an oil-equivalent basis, production increased by 7% from the third quarter of 2005. Excluding the impact of divestments and entitlements, production increased 10%.

Liquids production of 2,646 kbd (thousands of barrels per day) was up 195 kbd. Higher production from projects in West Africa and increased volumes in Abu Dhabi were partly offset by mature field decline, entitlement effects and divestment impacts. Excluding entitlement and divestment effects, liquids production increased by 12%.

Third quarter natural gas production was 8,163 mcfd (millions of cubic feet per day) compared with 7,716 mcfd last year. Higher volumes from projects in Qatar and absence of 2005 hurricane effects were partly offset by the impact of mature field decline and lower European demand.

Earnings from U.S. Upstream operations were \$1,192 million, \$479 million lower than the third quarter of 2005. Non-U.S. Upstream earnings excluding special items were \$5,301 million, up \$1,243 million from 2005.

Downstream earnings were \$2,738 million, up \$610 million from the third quarter 2005. The improved results reflect stronger worldwide marketing margins, which were partly offset by weaker refining margins. Petroleum product sales were 7,302 kbd, 175 kbd lower than last year's third quarter, primarily due to divestments.

U.S. Downstream earnings were \$1,272 million, up \$163 million. Non-U.S. Downstream earnings of \$1,466 million were \$447 million higher than in the third quarter of 2005.

Chemical earnings were \$1,351 million, up \$879 million from the third quarter 2005. The increase reflects stronger margins, partially offset by weaker demand for commodities. Prime product sales of 6,752 kt (thousands of metric tons) were down 203 kt from last year's third quarter.

Corporate and financing expenses were \$92 million, versus \$29 million in third quarter 2005.

During the third quarter of 2006, Exxon Mobil Corporation purchased 126 million shares of its common stock for the treasury at a gross cost of \$8.4 billion. These purchases included \$7.0 billion to reduce the number of shares outstanding and the balance to offset shares issued in conjunction with the company benefits plans and programs. Shares outstanding were reduced from 5,945 million at the end of the

second quarter to 5,832 million at the end of the third quarter. Purchases may be made in both the open market and through negotiated transactions, and may be increased, decreased or discontinued at any time without prior notice.

First Nine Months 2006 vs. First Nine Months 2005

Net income of \$29,250 million (\$4.86 per share) increased \$3,830 million from 2005. Net income for 2005 included net special items totaling a gain of \$1,880 million. Excluding special items, earnings increased by \$5,710 million versus 2005.

FIRST NINE MONTHS HIGHLIGHTS

- Earnings excluding special items were a record \$29,250 million, an increase of 24% reflecting ExxonMobil's continuing strong performance across all business segments.
- Earnings per share excluding special items increased by 31% due to strong earnings and the reduction in the number of shares outstanding.
- Net income was up 15%. There were no special items in the first nine months of 2006. Net income for the first nine months of 2005 included a \$1,620 million special gain related to the restructuring of the Corporation's interest in the Dutch gas transportation business, a \$460 million positive impact from the sale of the Corporation's interest in Sinopec and a \$200 million litigation charge.
- Cash flow from operations and asset sales was approximately \$42.8 billion, including \$2.3 billion from asset sales.
- The Corporation has distributed a total of \$23.8 billion to shareholders in 2006 through dividends and share purchases to reduce shares outstanding, an increase of \$7.4 billion versus 2005.
- Capital and exploration expenditures were \$14.8 billion, an increase of \$2.4 billion versus 2005.
- Oil-equivalent production is up 6%.

Upstream earnings excluding special items were \$20,010 million, an increase of \$4,319 million from 2005, primarily reflecting higher liquids and natural gas realizations.

On an oil-equivalent basis, production increased 6% from last year. Excluding divestment and entitlement effects, production increased by 9%.

Liquids production of 2,682 kbd increased by 195 kbd from 2005. Higher production from projects in West Africa and increased volumes in Abu Dhabi were partly offset by mature field decline, entitlement effects and divestment impacts. Excluding entitlement effects and divestments, liquids production increased 12%.

Natural gas production of 9,353 mcfd increased 295 mcfd from 2005. Higher volumes from projects in Qatar were partly offset by mature field decline.

Earnings from U.S. Upstream operations for 2006 were \$4,116 million, a decrease of \$297 million. Earnings outside the U.S. excluding special items were \$15,894 million, \$4,616 million higher than 2005.

Downstream earnings excluding special items were \$6,494 million, an increase of \$1,002 million from 2005 reflecting stronger worldwide refining and marketing margins, partly offset by lower refining throughput. Petroleum product sales of 7,180 kbd decreased from 7,494 kbd in 2005, primarily due to lower refining throughput and divestments.

U.S. Downstream earnings excluding special items were \$3,305 million, up \$352 million. Non-U.S. Downstream earnings excluding special items were \$3,189 million, \$650 million higher than last year.

Chemical earnings excluding special items were \$3,140 million, up \$572 million from 2005. Margins and volumes were both higher. Prime product sales were 20,523 kt, up 38 kt from 2005.

Corporate and financing expenses of \$394 million increased by \$183 million mainly due to tax items.

Gross share purchases in 2006 of \$21.2 billion reduced shares outstanding by 4.9%

Estimates of key financial and operating data follow.

ExxonMobil will discuss financial and operating results and other matters on a webcast at 10 a.m. Central time on October 26, 2006. To listen to the event live or in archive, go to our website at www.exxonmobil.com.

Statements in this release relating to future plans, projections, events, or conditions are forward-looking statements. Actual results, including project plans, resource recoveries, timing, and capacities, could differ materially due to changes in long-term oil or gas prices or other market conditions affecting the oil and gas industry; adverse political events; reservoir performance; the outcome of commercial negotiations; potential liability resulting from pending or future litigation; wars and acts of terrorism or sabotage; changes in technical or operating conditions; and other factors discussed under the heading "Factors Affecting Future Results" on our website and in Item 1A of ExxonMobil's 2005 Form 10-K. We assume no duty to update these statements as of any future date.

Consistent with previous practice this press release includes both net income and earnings excluding special items. Earnings that exclude special items are a non-GAAP financial measure and are included to help facilitate comparisons of base business performance across periods. A reconciliation to net income is shown in Attachment II. The release also includes cash flow from operations and asset sales. Because of the regular nature of our asset management and divestment program, we believe it is useful for investors to consider sales proceeds together with cash provided by operating activities when evaluating cash available for investment in the business and financing activities. Calculation of this cash flow is shown in Attachment II. Further information on ExxonMobil's frequently used financial and operating measures is contained on pages 28 and 29 in the 2005 Form 10-K and is also available-through-the Investor Information section of our website at www.exxonmobil.com.

Attachment I

(millions	of dollars, u	unless note	d)	
	Third	Quarter	Nine N	lonths
	2006	2005	2006	2005
Earnings / Earnings Per Share				
Total revenues and other		N. 9 3473		-224 v 3 2 5
income ¹ Total costs and other	99,593	100,717	287,607	271,336
deductions ¹ Income before income	81,415	84,665	235,766	229,622
taxes Income taxes	18,178 7,688	16,052 6,132	51,841 22,591	41,714 16,294
Net income (U.S. GAAP)	10,490	9,920	29,250	25,420
Net income per common share (dollars)	1.79	1.60	4.91	4.04
Net income per common	0100	114.5	3,000	
share - assuming dilution (dollars)	1.77	1.58	4.86	4.00

Other Financial Data

Dividends on common stock				
Total	1,892	1,822	5,775	5,390
Per common share				
(dollars)	0.32	0.29	0.96	0.85
Millions of common shares outstanding				
At September 30			5,832	6,222
Average - assuming	2444		2412	
dilution	5,922	6,303	6,022	6,361
Shareholders' equity at				
September 30			116,593	107,890
Capital employed at				
September 30			126,772	117,976
Income taxes	7,688	6,132	22,591	16,294
Excise taxes	7,764	8,160	23,639	22,913
All other taxes	10,793	11,544	31,573	33,700
Total taxes	26,245	25,836	77,803	72,907
ExxonMobil's share of income taxes of equity			-	
companies	434	998	1,311	1,760

¹Third quarter 2005 included \$8,439 million and the first nine months of 2005 included \$23,106 million for purchases/sales contracts with the same counterparty. These transactions are reported on a net basis in 2006.

Attachment II

(million	ns of dollars)		755.1		
	Third C	Third Quarter		Nine Months	
	2006	2005	2006	2005	
Net Income (U.S. GAAP)			-		
Upstream					
United States	1,192	1,671	4,116	4,413	
Non-U.S.	5,301	5,678	15,894	12,898	
Downstream					
United States	1,272	1,109	3,305	2,753	
Non-U.S.	1,466	1,019	3,189	2,849	
Chemical					
United States	458	70	976	905	
Non-U.S.	893	402	2,164	1,813	
Corporate and financing	(92)	(29)	(394)	(211)	
Corporate total	10,490	9,920	29,250	25,420	
Special Items					
Upstream					
United States	0	0	0	0.	

Non-U.S.	0	1,620	0	1,620
Downstream	U	1,020	U	1,020
United States	0	0	0	(200)
Non-U.S.	0	0	0	310
Chemical	U	U	U	310
United States	0	0	0	0
Non-U.S.	0	0	0	150
Corporate and financing	0	0	0	0
Corporate total	0	1,620	0	1,880
Earnings Excluding Special Items Upstream	-			
United States	4 400	1 671	4440	4 440
Non-U.S.		1,671	4,116	4,413
	5,301	4,058	15,894	11,278
Downstream		4 400		0.050
United States		1,109		2,953
Non-U.S.	1,466	1,019	3,189	2,539
Chemical	3	-		43.5
United States	458	70	976	905
Non-U.S.	893	402	2,164	1,663
Corporate and financing	(92)	and the second second	(394)	(211)
Corporate total	10,490	8,300	29,250	23,540
Cash flow from operations and asset sales (billions of dollars)	-	-00		
Net cash provided by operating activities (U.S. GAAP)	14.6	15.7	40.5	37.7
Sales of subsidiaries, investments and property, plant and equipment	0.8	0.8	2.3	4.6
Cash flow from operations and asset sales	15.4	16.5	42.8	42.3

Attachment III

		ird arter	Nine Months	
	2006	2005	2006	2005
Net production of crude oil and natural liquids, thousands of barrels daily (kbd				
United States	377	439	418	493
Canada	303	317	311	343
Europe	490	516	521	548
Africa	801	688	783	623
Asia Pacific/Middle East	507	337	485	331
Russia/Caspian	125	106	121	100
Other	43	48	43	49
Worldwide	2,646	2,451	2,682	2,487
Natural gas production available for sa millions of cubic feet daily (mcfd)	le,			
United States	1,588	1,609	1,644	1,779
Canada	864	926	862	921

Europe	2,836	2,930	4,079	4,151
Asia Pacific/Middle East	2,703	2,096	2,595	2,051
Russia/Caspian	91	70	86	70
Other	81	85	87	86
Worldwide	8,163	7,716	9,353	9,058
Oil-equivalent production (koebd) 1	4,007	3,737	4,241	3,997

Attachment IV

	Third (Quarter	Nine N	Months
	2006	2005	2006	2005
Petroleum product sales (kbd) 1			_	
United States	2,725	2,798	2,688	2,824
Canada	475	492	470	492
Europe	1,825	1,837	1,824	1,811
Asia Pacific	1,482	1,527	1,437	1,543
Other	795	823	761	824
Worldwide	7,302	7,477	7,180	7,494
Gasolines, naphthas	2,898	2,992	2,836	2,953
Heating oils, kerosene, diesel	2,160	2,151	2,153	2,209
Aviation fuels	687	713	651	693
Heavy fuels	703	675	685	674
Specialty products	854	946	855	965
Total	7,302	7,477	7,180	7,494
Refinery throughput (kbd)				
United States	1,766	1,744	1,734	1,836
Canada	461	439	438	462
Europe	1,721	1,735	1,691	1,657
Asia Pacific	1,484	1,530	1,420	1,492
Other	324	316	288	300
Worldwide	5,756	5,764	5,571	5,747
Chemical prime product sales, thousands of metric tons (kt)				4
United States	2,680	2,639	7,928	8,141
Non-U.S.	4,072	4,316	12,595	12,344
Worldwide	6,752	6,955	20,523	20,485

¹All petroleum product sales data is reported net of purchases/sales contracts with the same counterparty.

¹Gas converted to oil-equivalent at 6 million cubic feet = 1 thousand barrels

EXXON MOBIL CORPORATION THIRD QUARTER 2006

(millions of dollars)

	Third Quarter		Nine Months	
	2006	2005	2006	2005
Capital and Exploration Expenditures				
Upstream				0.000
United States	606	628	1,773	1,600
Non-U.S.	3,536		10,388	8,476
Total	4,142	3,586	12,161	10,076
Downstream				
United States	215	191	627	540
Non-U.S.	443	455	1,354	1,207
Total	658	646	1,981	1,747
Chemical			1	
United States	75	54	202	182
Non-U.S.	120	108	323	303
Total	195	162	525	485
Other	66	20	119	60
Worldwide	5,061	4,414	14,786	12,368
Exploration expenses charged to income included above				
Consolidated affiliates				
United States	85	29	184	103
Non-U.S.	263	215	611	517
Equity companies - ExxonMobil share				
United States	0	0	0	(
Non-U.S.	2	5	5	17
Worldwide	350	249	800	637

Attachment VI

EXXON MOBIL CORPORATION NET INCOME

\$ Millions \$ Per Common Share

2002		
First Quarter	2,090	0.30
Second Quarter	2,640	0.40
Third Quarter	2,640	0.39
Fourth Quarter	4,090	0.60
Year	11,460	1.69

2003		
First Quarter	7,040	1.05
Second Quarter	4,170	0.63
Third Quarter	3,650	0.55
Fourth Quarter	6,650	1.01
Year	21,510	3.24
2004		
First Quarter	5,440	0.83
Second Quarter	5,790	0.89
Third Quarter	5,680	0.88
Fourth Quarter	8,420	1.31
Year	25,330	3.91
2005		
First Quarter	7,860	1.23
Second Quarter	7,640	1.21
Third Quarter	9,920	1.60
Fourth Quarter	10,710	1.72
Year	36,130	5.76
2006		
First Quarter	8,400	1.38
Second Quarter	10,360	1.74
Third Quarter	10,490	1.79

Contacts

ExxonMobil Media Relations, 972/444-1109, 1108, 1107 and 1141



Index to Financial Statements

2005

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

 ■ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2005

Or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to Commission File Number 1-2256

EXXON MOBIL CORPORATION

(Exact name of registrant as specified in its charter)

NEW JERSEY

(State or other jurisdiction of incorporation or organization)

13-5409005

(I.R.S. Employer Identification Number)

5959 LAS COLINAS BOULEVARD, IRVING, TEXAS 75039-2298

(Address of principal executive offices) (Zip Code)

(972) 444-1000

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class

Name of Each Exchange on Which Registered

Common Stock, without par value (6,106,332,510 shares outstanding at January 31, 2006)
Registered securities guaranteed by Registrant:
SeaRiver Maritime Financial Holdings, Inc.

Twenty-Five Year Debt Securities due October 1, 2011

New York Stock Exchange

New York Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes V No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No ✓

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes _____ No ____

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act.

Large accelerated filer 🗸	Accelerated filer	Non-accelerated filer	

Indicate by check mark whether the registrant is a shell company (as defined by Rule 12b-2 of the Act). Yes ____ No _ <

The aggregate market value of the voting stock held by non-affiliates of the registrant on June 30, 2005, the last business day of the registrant's most recently completed second fiscal quarter, based on the closing price on that date of \$57.47 on the New York Stock Exchange composite tape, was in excess of \$362 billion.

Documents Incorporated by Reference: Proxy Statement for the 2006 Annual Meeting of Shareholders (Part III)

Index to Financial Statements

EXXON MOBIL CORPORATION FORM 10-K FOR THE FISCAL YEAR ENDED DECEMBER 31, 2005

TABLE OF CONTENTS

		Page Number
	PART I	
Item 1.	Business	1
Item 1A.	Risk Factors	2
Item 1B.	Unresolved Staff Comments	3
Item 2.	Properties	4
Item 3.	Legal Proceedings	19
Item 4.	Submission of Matters to a Vote of Security Holders	20
Executive O	fficers of the Registrant [pursuant to Instruction 3 to Regulation S-K, Item 401(b)]	20
	PART II	
Item 5.	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	21
Item 6.	Selected Financial Data	22
Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operations	22
Item 7A.	Quantitative and Qualitative Disclosures About Market Risk	22
Item 8.	Financial Statements and Supplementary Data	23
Item 9.	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure	23
Item 9A.	Controls and Procedures	23
Item 9B.	Other Information	23
	PART III	
Item 10.	Directors and Executive Officers of the Registrant	24
Item 11.	Executive Compensation	24
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	24
Item 13.	Certain Relationships and Related Transactions	24
Item 14.	Principal Accounting Fees and Services	24
	PART IV	
Item 15.	Exhibits, Financial Statement Schedules	24
Financial Se	ction	25
Signatures		87
Index to Exh	tibits	89
Exhibit 12 -	- Computation of Ratio of Earnings to Fixed Charges	
Exhibits 31 a	and 32 — Certifications	

Index to Financial Statements

PART I

Item 1. Business.

Exxon Mobil Corporation, formerly named Exxon Corporation, was incorporated in the State of New Jersey in 1882. On November 30, 1999, Mobil Corporation became a wholly-owned subsidiary of Exxon Corporation, and Exxon changed its name to Exxon Mobil Corporation.

Divisions and affiliated companies of ExxonMobil operate or market products in the United States and about 200 other countries and territories. Their principal business is energy, involving exploration for, and production of, crude oil and natural gas, manufacture of petroleum products and transportation and sale of crude oil, natural gas and petroleum products. ExxonMobil is a major manufacturer and marketer of commodity petrochemicals, including olefins, aromatics, polyethylene and polypropylene plastics and a wide variety of specialty products. ExxonMobil also has interests in electric power generation facilities. Affiliates of ExxonMobil conduct extensive research programs in support of these businesses.

Exxon Mobil Corporation has several divisions and hundreds of affiliates, many with names that include ExxonMobil, Exxon, Esso or Mobil. For convenience and simplicity, in this report the terms ExxonMobil, Exxon, Esso and Mobil, as well as terms like Corporation, Company, our, we and its, are sometimes used as abbreviated references to specific affiliates or groups of affiliates. The precise meaning depends on the context in question.

Throughout ExxonMobil's businesses, new and ongoing measures are taken to prevent and minimize the impact of our operations on the air, water and ground. This includes a significant investment in refining technology to manufacture low-sulfur motor fuels as well as projects to reduce nitrogen oxide and sulfur oxide emissions. ExxonMobil's 2005 worldwide environmental costs for all such preventative and remediation steps were about \$3.3 billion, of which \$1.2 billion were capital expenditures and \$2.1 billion were included in expenses. The total cost for such activities is expected to remain in this range in 2006 and 2007 (with capital expenditures approximately 35 percent of the total).

Operating data and industry segment information for the Corporation are contained on pages 30, 73, 74 and 86; information on oil and gas reserves is contained on pages 80 through 83 and information on Company-sponsored research and development activities is contained on page 58 of the Financial Section of this report.

The number of regular employees was 83.7 thousand, 85.9 thousand and 88.3 thousand at years ended 2005, 2004 and 2003, respectively. Regular employees are defined as active executive, management, professional, technical and wage employees who work full time or part time for the Corporation and are covered by the Corporation's benefit plans and programs. Regular employees do not include employees of the company-operated retail sites (CORS). The number of CORS employees was 22.4 thousand, 19.3 thousand and 17.4 thousand at years ended 2005, 2004 and 2003, respectively.

ExxonMobil maintains a website at www.exxonmobil.com. Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934 are made available through our website as soon as reasonably practical after we electronically file or furnish the reports to the Securities and Exchange Commission. Also available on the Corporation's website are the Company's Corporate Governance Guidelines and Code of Ethics and Business Conduct, as well as the charters of the audit, compensation and nominating committees of the Board of Directors. All of these documents are available in print without charge to shareholders who request them. Information on our website is not incorporated into this report.

Index to Financial Statements

Item 1A. Risk Factors.

ExxonMobil's financial and operating results are subject to a number of factors, many of which are not within the company's control. These factors include the following:

Industry and Economic Factors: The oil and gas business is fundamentally a commodity business. This means the operations and earnings of the Corporation and its affiliates throughout the world may be significantly affected by changes in oil, gas and petrochemical prices and by changes in margins on gasoline and other refined products. Oil, gas, petrochemical and product prices and margins in turn depend on local, regional and global events or conditions that affect supply and demand for the relevant commodity. These events or conditions are generally not predictable and include, among other things:

- · general economic growth rates and the occurrence of economic recessions;
- · the development of new supply sources;
- · adherence by countries to OPEC quotas;
- · supply disruptions;
- weather, including seasonal patterns that affect regional energy demand (such as the demand for heating oil or gas in winter) as well as severe weather events (such as hurricanes) that can disrupt supplies or interrupt the operation of ExxonMobil facilities;
- technological advances, including advances in exploration, production, refining and petrochemical manufacturing technology and advances in technology relating to energy usage;
- · changes in demographics, including population growth rates and consumer preferences; and
- the competitiveness of alternative hydrocarbon or other energy sources.

Under certain market conditions, factors that have a positive impact on one segment of our business may have a negative impact on another segment and vice versa.

Competitive Factors: The energy and petrochemical industries are highly competitive. There is competition within the industries and also with other industries in supplying the energy, fuel and chemical needs of both industrial and individual consumers. The Corporation competes with other firms in the sale or purchase of needed goods and services in many national and international markets and employs all methods of competition which are lawful and appropriate for such purposes.

A key component of the Corporation's competitive position, particularly given the commodity-based nature of many of its businesses, is ExxonMobil's ability to manage expenses successfully. This requires continuous management focus on reducing unit costs and improving efficiency including through technology improvements, cost control, productivity enhancements and regular reappraisal of our asset portfolio as described elsewhere in this report.

Political Factors: The operations and earnings of the Corporation and its affiliates throughout the world have been, and may in the future be, affected from time to time in varying degree by political factors including:

- · political instability or lack of well-established and reliable legal systems in areas where the Corporation operates;
- other political developments and laws and regulations (such as expropriation or forced divestiture of assets and unilateral cancellation or modification of contract terms, as well as de-regulation of certain energy markets);
- · environmental regulations;

Index to Financial Statements

- · restrictions on exploration, production, imports and exports;
- restrictions on the Corporation's ability to do business with certain countries, or to engage in certain areas of business within a country;
- · price controls;
- · tax or royalty increases (including retroactive claims);
- · war or other international conflicts; and
- · civil unrest.

Both the likelihood of these occurrences and their overall effect upon the Corporation vary greatly from country to country and are not predictable. A key component of the Corporation's strategy for managing political risk is geographic diversification of the Corporation's assets and operations.

Project Factors: In addition to some of the factors cited above, ExxonMobil's results depend upon the Corporation's ability to develop and operate major projects and facilities as planned. The Corporation's results will therefore be affected by events or conditions that impact the advancement, operation, cost or results of such projects or facilities, including:

- the outcome of negotiations with co-venturers, governments, suppliers, customers or others (including, for example, our ability to negotiate favorable long-term contracts with customers, or the development of reliable spot markets, that may be necessary to support the development of particular production projects);
- reservoir performance and natural field decline;
- changes in operating conditions and costs, including costs of third party equipment or services such as drilling rigs and shipping;
- · security concerns or acts of terrorism that threaten or disrupt the safe operation of company facilities; and
- the occurrence of unforeseen technical difficulties (including technical problems that may delay start-up or interrupt
 production from an Upstream project or that may lead to unexpected downtime of refineries or petrochemical plants).

See section 1 of Item 2 of this report for a discussion of additional factors affecting future capacity growth and the timing and ultimate recovery of reserves.

Market Risk Factors: See pages 40 and 41 of the Financial Section of this report for discussion of the impact of market risks, inflation and other uncertainties.

Projections, estimates and descriptions of ExxonMobil's plans and objectives included or incorporated in Items 1, 2, 7 and 7A of this report are forward-looking statements. Actual future results, including project completion dates, production rates, capital expenditures, costs and business plans could differ materially due to, among other things, the factors discussed above and elsewhere in this report.

Item 1B. Unresolved Staff Comments.

None.

Index to Financial Statements

Item 2. Properties.

Part of the information in response to this item and to the Securities Exchange Act Industry Guide 2 is contained in the Financial Section of this report in note 8, which note appears on page 60, and on pages 76 through 85.

Information with regard to oil and gas producing activities follows:

1. Net Reserves of Crude Oil and Natural Gas Liquids and Natural Gas at Year-End 2005

Estimated proved reserves are shown on pages 80 through 83 of the Financial Section of this report. No major discovery or other favorable or adverse event has occurred since December 31, 2005, that would cause a significant change in the estimated proved reserves as of that date. For information on the standardized measure of discounted future net cash flows relating to proved oil and gas reserves, see pages 84 and 85 of the Financial Section of this report.

The table below summarizes the oil-equivalent proved reserves in each geographic area for consolidated subsidiaries as detailed on pages 80 through 83 of the Financial Section of this report for the year ended December 31, 2005. The Corporation has reported 2004 and 2005 proved reserves on the basis of December 31 prices and costs. Gas is converted to an oil-equivalent basis at six million cubic feet per one thousand barrels.

	United States	Canada	Europe	Africa	Asia Pacific/ Middle East	Russia/ Caspian	South America	Total Consolidated
Liquids	2,113	832	883	(millio 2,312	ons of barro	707	451	7,813
Natural gas	13,692	1,705	8,398	(billion 841	s of cubic t	feet) 821	619	33,355
Oil-equivalent basis	4,395	1,116	-			nt barrels) 844	554	13,372

Additional detail on developed and undeveloped oil-equivalent proved reserves is shown in the table below.

	Year-	Year-End 2005		End 2004
	Developed	Undeveloped	Developed	Undeveloped
		(millions of ail-e	quivalent barrels)	
Consolidated Subsidiaries				
United States	3,411	984	3,726	922
Canada	862	254	836	105
Europe	1,711	572	1,942	603
Africa	1,281	1,171	1,164	1,408
Asia Pacific/Middle East	1,475	253	1,143	437
Russia/Caspian	93	751	34	776
South America	279	275	176	430
Total	9,112	4,260	9,021	4,681
Equity Companies	-			
United States	345	91	367	59
Europe	1,713	468	1,649	627
Asia Pacific/Middle East	1,938	2,629	1,404	2,007
Russia/Caspian	713	373	740	399
Total	4,709	3,561	4,160	3,092

Index to Financial Statements

In the preceding reserves information, and in the reserves tables on pages 80 through 83 of the Financial Section of this report, consolidated subsidiary and equity company reserves are reported separately. However, the Corporation operates its business with the same views of equity company reserves as it has for reserves from consolidated subsidiaries.

The Corporation's overall volume capacity outlook, based on projects coming on stream as anticipated, is for production capacity to grow over the period 2006-2010. However, actual volumes will vary from year to year due to the timing of individual project start-ups, operational outages, reservoir performance, regulatory changes, asset sales, severe weather events, price effects on production sharing contracts and other factors as described in Item 1A—Risk Factors of this report.

The estimation of proved reserves, which is based on the requirement of reasonable certainty, is an ongoing process based on rigorous technical evaluations, commercial and market assessments and detailed analysis of well information such as flow rates and reservoir pressure declines. Furthermore, the Corporation only records proved reserves for projects which have received significant funding commitments by management made toward the development of the reserves. Although the Corporation is reasonably certain that proved reserves will be produced, the timing and ultimate recovery can be affected by a number of factors including completion of development projects, reservoir performance, regulatory approvals and significant changes in projections of long term oil and gas price levels.

2. Estimates of Total Net Proved Oil and Gas Reserves Filed with Other Federal Agencies

During 2005, ExxonMobil filed proved reserves estimates with the U.S. Department of Energy on Forms EIA-23 and EIA-28. The information on Form EIA-28 is presented on the same basis as the registrant's Annual Report on Form 10-K for 2004, which shows ExxonMobil's net interests in all liquids and gas reserve volumes and changes thereto from both ExxonMobil-operated properties and properties operated by others. The data on Form EIA-23, although consistent with the data on Form EIA-28, is presented on a different basis, and includes 100 percent of the oil and gas volumes from ExxonMobil-operated properties only, regardless of the company's net interest. In addition, Form EIA-23 information does not include gas plant liquids. The difference between the oil reserves and gas reserves reported on EIA-23 and those reported in the registrant's Annual Report on Form 10-K for 2004 exceeds five percent.

3. Average Sales Prices and Production Costs per Unit of Production

Reference is made to pages 76 and 77 of the Financial Section of this report. Average sales prices have been calculated by using sales quantities from the Corporation's own production as the divisor. Average production costs have been computed by using net production quantities for the divisor. The volumes of crude oil and natural gas liquids (NGL) production used for this computation are shown in the reserves table on page 81 of the Financial Section of this report. The volumes of natural gas used in the calculation are the production volumes of natural gas available for sale and thus are different from those shown in the reserves table on page 82 of the Financial Section of this report due to volumes consumed or flared. The volumes of natural gas were converted to oil-equivalent barrels based on a conversion factor of six thousand cubic feet per barrel.

Index to Financial Statements

4. Gross and Net Productive Wells

		Year-End 2005			Year-End 2004			
	C	Oil Gas		Off		Gas		
	Gross	Net	Gross	Net	Gross	Net	Gross	Net
United States	28,288	10,865	9,187	5,441	30,702	11,949	9,335	5,577
Canada	5,967	5.214	6.115	2,991	7,156	5,890	5,663	2,752
Europe	1,872	590	1,294	512	1,872	594	1,304	520
Africa	674	277	14	6	562	235	18	7
Asia Pacific/Middle East	1,991	532	259	180	2,078	577	235	172
Russia/Caspian	77	16	2	1	63	13	1 -	
South America	154	64	89	30	177	65	67	25
Total	39,023	17,558	16,960	9,161	42,610	19,323	16,622	9,053
		_		_	_	_	_	_

The numbers of wells operated at year-end 2005 were 17,351 gross wells and 14,028 net wells. At year-end 2004, the numbers of operated wells were 18,427 gross wells and 15,216 net wells.

5. Gross and Net Developed Acreage

	Year-E	Year-End 2005		nd 2004	
	Gross	Net	Gross	Net	
50 / in A in		(thousand	is of acres)	-	
United States	9,194	5,260	9,017	5,480	
Canada	5,615	2,238	5,535	2,499	
Europe	11,303	4,687	11,345	4,715	
Africa	1,497	545	1,179	475	
Asia Pacific/Middle East	7,876	1,570	10,116	2,436	
Russia/Caspian	531	116	487	103	
South America	690	232	1,331	388	
Total	36,706	14,648	39,010	16,096	

Note: Separate acreage data for oil and gas are not maintained because, in many instances, both are produced from the same acreage.

6. Gross and Net Undeveloped Acreage

Year-End 2005		Year-Er	id 2004
Gross	Net	Gross	Net
-	(thousand	s of acres)	
10,388	6,413	10,913	7,055
10,070	4,822	10,440	5,997
8,782	2,778	8,418	2,245
49,328	29,048	41,380	21,797
7,114	3,797	7,806	4,180
2,561	569	2,605	561
26,552	19,513	27,020	19,688
114,795	66,940	108,582	61,523
	10,388 10,070 8,782 49,328 7,114 2,561 26,552	Gross Net (thousand 10,388 6,413 10,070 4,822 8,782 2,778 49,328 29,048 7,114 3,797 2,561 569 26,552 19,513	Gross Net Gross 10,388 6,413 10,913 10,070 4,822 10,440 8,782 2,778 8,418 49,328 29,048 41,380 7,114 3,797 7,806 2,561 569 2,605 26,552 19,513 27,020

ExxonMobil's investment in developed and undeveloped acreage is comprised of numerous concessions, blocks and leases. The terms and conditions under which the Corporation maintains exploration and/or production rights to the acreage are property-specific, contractually defined and vary significantly from property to property. Work programs are designed to ensure that the exploration potential of any property is fully evaluated before expiration. In some instances, the Corporation may elect to relinquish acreage in advance of the contractual expiration date if the evaluation process is complete and there is not a business basis for extension. In cases where additional time may be required to fully evaluate acreage, the Corporation has generally been successful in obtaining extensions.

Index to Financial Statements

7. Summary of Acreage Terms in Key Areas

UNITED STATES

Oil and gas leases have an exploration period ranging from one to ten years, and a production period that normally remains in effect until production ceases. In some instances, a "fee interest" is acquired where both the surface and the underlying mineral interests are owned outright.

CANADA

Exploration permits are granted for varying periods of time with renewals possible. Production leases are held as long as there is production on the lease. The majority of Cold Lake leases were taken for an initial 21-year term in 1968-1969 and renewed for a second 21-year term in 1989-1990. The exploration acreage in eastern Canada is currently held by work commitments of various amounts.

EUROPE

France

Exploration permits are granted for periods of three to five years, and are renewable up to two times accompanied by substantial acreage relinquishments: 50 percent of the acreage at first renewal; 25 percent of the remaining acreage at second renewal. A 1994 law requires a bidding process prior to granting of an exploration permit. Upon discovery of commercial hydrocarbons, a production concession is granted for up to 50 years, renewable in periods of 25 years each.

Germany

Exploration concessions are granted for an initial maximum period of five years with possible extensions of up to three years for an indefinite period. Extensions are subject to specific, minimum work commitments. Production licenses are normally granted for 20 to 25 years with multiple possible extensions as long as there is production on the license.

Netherlands

Under the new Mining Law, effective January 1, 2003, exploration and production licenses for both onshore and offshore areas are issued for a period of time necessary to perform the activities for which the license is issued. License conditions are stipulated in the Mining Law.

Exploration and production rights granted prior to January 1, 2003 remain subject to their existing terms, and differ slightly for onshore and offshore areas.

Onshore: Exploration licenses were issued for a period of time necessary to perform the activities for which the license was issued. Production concessions are granted after discoveries have been made, under conditions that are negotiated with the government. Normally, they are field-life concessions covering an area defined by hydrocarbon occurrences.

Offshore: Exploration licenses issued between 1976 and 1996 were for a ten-year period, with relinquishment of about 50 percent of the original area required at the end of six years. Exploration licenses granted after that time were for a period of time necessary to perform the activities for which the permit was issued. Production licenses are normally issued for a 40-year period.

Norway

Licenses issued prior to 1972 were for an initial period of six years and an extension period of 40 years, with relinquishment of at least one-fourth of the original area required at the end of the sixth

Index to Financial Statements

year and another one-fourth at the end of the ninth year. Licenses issued between 1972 and 1997 were for an initial period of up to six years (with extension of the initial period of one year at a time up to ten years after 1985), and an extension period of up to 30 years, with relinquishment of at least one-half of the original area required at the end of the initial period. Licenses issued after July 1, 1997 have an initial period of up to ten years and a normal extension period of up to 30 years or in special cases of up to 50 years, and with relinquishment of at least one-half of the original area required at the end of the initial period.

United Kingdom

Acreage terms are fixed by the government and are periodically changed. For example, many of the early licenses issued under the first four licensing rounds, provided for an initial term of six years with relinquishment of at least one-half of the original area at the end of the initial term, subject to extension for a further 40 years. ExxonMobil's licenses issued in 2005 as part of the 23rd licensing round have an initial term of four years with a second term extension of four years and final term of 18 years. There is a mandatory relinquishment of 50-percent of acreage after the initial term and of all acreage that is not covered by a development plan at the end of the second term.

AFRICA

Angola

Exploration and production activities are governed by production sharing agreements with an initial exploration term of four years and an optional second phase of two to three years. The production period is for 25 years, and agreements generally provide for a negotiated extension.

Cameroon

Exploration and production activities are governed by various agreements negotiated with the national oil company and the government of Cameroon. Exploration permits are granted for terms from four to 16 years and are generally renewable for multiple periods up to four years each. Upon commercial discovery, mining concessions are issued for a period of 25 years with one 25-year extension.

Chad

Exploration permits are issued for a period of five years, and are renewable for one or two further five-year periods. The terms and conditions of the permits, including relinquishment obligations, are specified in a negotiated convention. The production term is for 30 years and may be extended at the discretion of the government.

Equatorial Guinea

Exploration and production activities are governed by production sharing contracts negotiated with the State Ministry of Mines and Energy. The exploration periods are for ten to 15 years with limited relinquishments in the absence of commercial discoveries. The production period for crude oil is 30 years while the production period for gas is 50 years.

Nigeria

Exploration and production activities in the deepwater offshore areas are typically governed by production sharing contracts (PSCs) with the national oil company, the Nigerian National Petroleum Corporation (NNPC). NNPC holds the underlying Oil Prospecting License (OPL) and any resulting Oil Mining Lease (OML). The terms of the PSCs are generally 30 years, including a ten-year exploration period (an initial exploration phase plus one or two optional periods) covered by an OPL.

Index to Financial Statements

Upon commercial discovery, an OPL may be converted to an OML. Partial relinquishment is required under the PSC at the end of the ten-year exploration period, and OMLs have a 20-year production period that may be extended.

Some exploration activities are carried out in deepwater by joint ventures with local companies holding interests in an OPL. OPLs in deepwater offshore areas are valid for ten years and are non-renewable, while in all other areas the licenses are for five years and also are non-renewable. Demonstrating a commercial discovery is the basis for conversion of an OPL to an OML.

OMLs granted prior to the 1969 Petroleum Act (i.e., under the Mineral Oils Act 1914, repealed by the 1969 Petroleum Act) were for 30 years onshore and 40 years in offshore areas and are renewable upon 12 months' written notice, for further periods of 30 and 40 years, respectively. Operations under these pre-1969 OMLs are conducted under a joint venture agreement with NNPC rather than a PSC.

OMLs granted under the 1969 Petroleum Act, which include all deepwater OMLs, have a maximum term of 20 years without distinction for onshore or offshore location and are renewable, upon 12 months' written notice, for another period of 20 years. OMLs not held by NNPC are also subject to a mandatory 50 percent relinquishment after the first ten years of their duration.

The Memorandum of Understanding (MOU) defining commercial terms applicable to existing joint venture oil production was renegotiated and executed in 2000. The MOU is effective for a minimum of three years with possible extensions on mutual agreement and is terminable on one calendar year's notice.

ASIA PACIFIC / MIDDLE EAST

Australia

Exploration and production activities are conducted offshore and are governed by Federal legislation. Exploration permits granted before January 1, 2003, were issued for six years with three possible five-year renewal periods. Exploration permits granted after that date are issued for six years with two possible five-year renewal periods. A 50-percent relinquishment of remaining area is mandatory at the end of each renewal period. Retention leases may be granted for resources that are not commercially viable at the time of application, but are expected to become commercially viable within 15 years. These are granted for periods of five years and renewals may be requested. Prior to September 1998, production licenses were granted initially for 21 years, with a further renewal of 21 years and thereafter renewals at the discretion of the Joint Authority, comprising Federal and State Ministers. Effective from September 1998, new production licenses are granted "indefinitely", i.e., for the life of the field (if no operations for the recovery of petroleum have been carried on for five years, the license may be terminated).

Indonesia

Exploration and production activities in Indonesia are generally governed by cooperation contracts, usually in the form of a production sharing contract, negotiated with BPMIGAS, a government agency established in 2002 to manage upstream oil and gas activities. Formerly this activity was carried out by Pertamina, the government owned oil company, which is now a competing limited liability company.

Japan

The Mining Law provides for the granting of concessions that convey exploration and production rights. Exploration rights are granted for an initial two-year period, and may be extended for two two-year periods for gas and three two-year periods for oil. Production rights have no fixed term and continue until abandonment so long as the rights holder is fulfilling its obligations.

Index to Financial Statements

Malaysia

Exploration and production activities are governed by production sharing contracts negotiated with the national oil company. The more recent contracts have an overall term of 24 to 38 years, depending on whether deep water areas or otherwise, with possible extensions to the exploration and/or development periods. The exploration period is five to seven years with the possibility of extensions, after which time areas with no commercial discoveries will be deemed relinquished. The development period is from four to six years from commercial discovery, with the possibility of extensions under special circumstances. Areas from which commercial production has not started by the end of the development period will be deemed relinquished if no extension is granted. All extensions are subject to the national oil company's prior written approval. The total production period is 15 to 25 years from first commercial lifting, not to exceed the overall term of the contract.

Papua New Guinea

Exploration and production activities are governed by the Oil and Gas Act. Petroleum Prospecting licenses are granted for an initial term of six years with a five-year extension possible (an additional extension of three years is possible in certain circumstances). Generally, a 50-percent relinquishment of the license area is required at the end of the initial six-year term, if extended. Petroleum Development licenses are granted for an initial 25-year period. An extension of up to 20 years may be granted at the Minister's discretion. Petroleum Retention licenses may be granted for gas resources that are not commercially viable at the time of application, but may become commercially viable. Petroleum Retention licenses are granted for five-year terms, and may be extended twice for a maximum retention time of 15 years.

Qatar

The State of Qatar grants gas production development project rights to develop and supply gas from the offshore North Field to permit the economic development and production of gas reserves sufficient to satisfy the gas and LNG sales obligations of these projects.

Republic of Yemen

Production sharing agreements (PSAs) negotiated with the government entitle the company to participate in exploration operations within a designated area during the exploration period. In the event of a commercial oil discovery, the company is entitled to proceed with development and production operations during the development period. The length of these periods and other specific terms are negotiated prior to executing the PSA. Existing production operations have a development period extending 20 years from first commercial declaration made in November 1985 for the Marib PSA and June 1995 for the Jannah PSA. The Government of Yemen awarded a five-year extension of the Marib PSA, but later repudiated the extension and expelled the concession holders. The parties are now in arbitration over the validity of the extension.

Thailand

The Petroleum Act of 1971 allows production under ExxonMobil's concession for 30 years with a possible ten-year extension at terms generally prevalent at the time.

United Arab Emirates

Exploration and production activities in the Emirate of Abu Dhabi are governed by a 75-year oil concession agreement executed in 1939 and subsequently amended through various agreements with the government of Abu Dhabi.

Index to Financial Statements

RUSSIA/CASPIAN

Azerbaijan

The production sharing agreement (PSA) for the development of the Azeri-Chirag-Gunashli field is established for an initial period of 30 years starting from the PSA execution date in 1994.

Other exploration and production activities are governed by PSAs negotiated with the national oil company of Azerbaijan. The exploration period consists of three or four years with the possibility of a one to three-year extension. The production period, which includes development, is for 25 years or 35 years with the possibility of one or two five-year extensions.

Kazakhstan

Onshore: Exploration and production activities are governed by the production license, exploration license and joint venture agreements negotiated with the Republic of Kazakhstan. Existing production operations have a 40-year production period that commenced in 1993.

Offshore: Exploration and production activities are governed by a production sharing agreement negotiated with the Republic of Kazakhstan. The exploration period is six years with possible extensions. The production period, which includes development, is for 20 years with the possibility of two ten-year extensions.

Russia

Terms for ExxonMobil's acreage are fixed by the production sharing agreement (PSA) that became effective in 1996 between the Russian government and the Sakhalin-1 consortium, of which ExxonMobil is the operator. The term of the PSA is 20 years from the Declaration of Commerciality, which would be 2021. The term may be extended thereafter in 10-year increments as specified in the PSA.

SOUTH AMERICA

Argentina

The onshore concession terms in Argentina are up to four years for the initial exploration period, up to three years for the second exploration period and up to two years for the third exploration period. A 50-percent relinquishment is required after each exploration period. An extension after the third exploration period is possible for up to five years. The total production term is 25 years with a ten-year extension possible, once a field has been developed.

Venezuela

Exploration and production activities are governed by Association Agreements containing risk/profit provisions negotiated with the national oil company or its affiliates. Association Agreements are awarded for a term not to exceed 39 years. These agreements have an exploration and a production phase. The term of production begins after the exploration phase and runs for 20 years with the possibility of an extension, so long as the total contract term does not exceed 39 years.

Strategic association agreements (such as the Cerro Negro project) are typically limited to those projects that require vertical integration for extra heavy crude oil. Contracts are awarded for 35 years. Significant amendments to the contract terms require Venezuelan congressional approval.

Index to Financial Statements

8.	Number of Net	Productive and	Dry Wells Drilled	
0.	ranimoer or ract	Frouuctive and	DIY WELLS DITHE	·

o. Humber of Net Fronteine and Dry Wells Dimes	2005	2004	2003
	_	_	_
A. Net Productive Exploratory Wells Drilled	13	11	13
United States		2	13
Canada	10	3	
Europe	4 5		4
Africa		2	4
Asia Pacific/Middle East	1	2	2
Russia/Caspian	_	1	2
South America		_	2
Total	24	21	38
B. Net Dry Exploratory Wells Drilled	_		_
United States	5	6	10
Canada	9	4	9
	.1	1	3
Europe	5	4	3
Africa		4	3
Asia Pacific/Middle East	1	_	2
Russia/Caspian	[1]		_
South America	_		
Total	13	15	28
70		_	
C. Net Productive Development Wells Drilled			
United States	537	568	598
Canada	263	466	297
Europe	19	24	36
Africa	61	64	59
Asia Pacific/Middle East	50	35	68
	7	4	2
Russia/Caspian South America	ý	3	
South America			_
Total	946	1,164	1,060
D. Net Dry Development Wells Drilled			
United States	8	13	14
Canada	2 2	2	16
Europe	2	2 2	2
Africa			1
Asia Pacific/Middle East	2	1	î
Russia/Caspian		-	_
South America			_
South America	_		
Total	14	18	34
	-	5	
Total number of net wells drilled	997	1,218	1,160
	_	_	_

9. Present Activities

A. Wells Drilling

		Year- End 2005		r- 2004
	Gross	Net	Gross	Net
United States	148	84	179	81
Canada	148	94	31	17
Europe	46	12	32	8
Africa	53	21	80	33
Asia Pacific/Middle East	70	24	52	25
Russia/Caspian	38	8	31	5
South America	3	1	3	1
Total	506	244	408	170
		_		_

Index to Financial Statements

B. Review of Principal Ongoing Activities in Key Areas

During 2005, ExxonMobil's activities were conducted, either directly or through affiliated companies, by ExxonMobil Exploration Company (for exploration), by ExxonMobil Development Company (for large development activities), by ExxonMobil Production Company (for producing and smaller development activities) and by ExxonMobil Gas & Power Marketing Company (for gas marketing). During this same period, some of ExxonMobil's exploration, development, production and gas marketing activities were also conducted in Canada by the Resources Division of Imperial Oil Limited, which is 69.6 percent owned by ExxonMobil.

Some of the more significant ongoing activities are set forth below:

UNITED STATES

Exploration and delineation of additional hydrocarbon resources continued in 2005. At year-end 2005, ExxonMobil's acreage totaled 11.7 million net acres, of which 3.0 million net acres were offshore. ExxonMobil was active in areas onshore and offshore in the lower 48 states and in Alaska.

During 2005, 514.3 net exploration and development wells were completed in the inland lower 48 states and 9.0 net development wells were completed offshore in the Pacific. An acid gas injection project was started up to increase existing plant capacity at the Shute Creek treating facility in La Barge, Wyoming, and tight gas development continues in the Piceance Basin of Colorado. Participation in Alaska production and development continued and a total of 23.7 net exploration and development wells were drilled. On Alaska's North Slope, activity continued on the Western Region Development Project (primarily the Orion field) with development drilling and engineering design for facility expansions.

ExxonMobil's net acreage in the Gulf of Mexico at year-end 2005 was 2.8 million acres. A total of 16.2 net exploration and development wells were completed during the year. Installation of the semi-submersible production and drilling vessel, along with infrastructure to transport future oil and gas production onshore, continued for the Thunder Horse development in 2005. Startup, delayed due to a listing incident, is anticipated to occur in 2006.

CANADA

ExxonMobil's year-end 2005 acreage holdings totaled 7.1 million net acres, of which 3.1 million net acres were offshore. A total of 266.7 net exploration and development wells were completed during the year. In eastern Canada, work continued on the Sable Compression project.

EUROPE

France

ExxonMobil's acreage at year-end 2005 was 0.1 million net onshore acres.

Germany

A total of 2.3 million net onshore acres and 0.1 million net offshore acres were held by ExxonMobil at year-end 2005, with 7.6 net exploration and development wells drilled during the year.

Netherlands

ExxonMobil's interest in licenses totaled 1.9 million net acres at year-end 2005, 1.5 million acres onshore and 0.4 million acres offshore. During 2005, 1.8 net exploration and development wells were

Index to Financial Statements

drilled. Offshore, the first unmanned minimum facility monotower platform was successfully located on the K17-FA field. Onshore, a multi-year project is underway to renovate production clusters and install new compression to maintain capacity and extend field life.

Norway

ExxonMobil's net interest in licenses at year-end 2005 totaled approximately 1.0 million acres, all offshore. ExxonMobil participated in 7.7 net exploration and development well completions in 2005. Production was initiated at the Oseberg J field in June, the Aasgard Q field in August and the Kristin field in November 2005. The Sleipner A low pressure project and Ringhorne East, Oseberg Vestflanken, Fram East and Ormen Lange field developments are in progress.

United Kingdom

ExxonMobil's net interest in licenses at year-end 2005 totaled approximately 2.1 million acres, all offshore. A total of 9.4 net exploration and development wells were completed during the year. The Arthur project commenced production in early 2005. Other projects progressed in 2005 include Caravel, Cutter, Merganser and Starling.

AFRICA

Angola

ExxonMobil's year-end 2005 acreage holdings totaled 0.7 million net offshore acres and 12.0 net exploration and development wells were completed during the year. On Block 15, production began in July from the Kizomba B development and design work is complete on the Marimba development, which will tie-back to the Kizomba A Floating, Production, Storage and Offloading (FPSO) vessel. Planning for the Kizomba C development is ongoing. A block-wide 4D seismic acquisition program started late in the year. On Block 17, construction is underway on the Dalia and Rosa developments.

Cameroon

ExxonMobil's acreage totaled 0.3 million net offshore acres at year-end 2005.

Chad

ExxonMobil's net year-end 2005 acreage holdings consisted of 3.3 million onshore acres, with 35.6 net exploration and development wells completed during the year. Development of the Moundouli field is in progress.

Equatorial Guinea

ExxonMobil's acreage totaled 0.4 million net offshore acres at year-end 2005, with 4.5 net development wells completed during the year.

Nigeria

ExxonMobil's net acreage totaled 1.6 million offshore acres at year-end 2005, with 17.3 net exploration and development wells completed during the year. The ExxonMobil-operated Yoho field (OML 104) early production system was expanded, and the full field production platform was installed. The ExxonMobil-operated East Area Additional Oil Recovery platform was also installed, and detailed design and construction began on the ExxonMobil-operated East Area NGL II project. Production began in 2005 at the deepwater Bonga field (OML 118). Drilling continued at the ExxonMobil-operated deepwater Erha field (OPL 209), and the Erha FPSO vessel arrived. Construction continued on the

Index to Financial Statements

Amenam-Kpono Phase 2 Gas project and Front End Engineering and Design (FEED) work was initiated on the deepwater Usan field (OPL 222).

ASIA PACIFIC / MIDDLE EAST

Australia

ExxonMobil's net year-end 2005 acreage holdings totaled 1.2 million acres, all offshore. ExxonMobil drilled a total of 11.4 net exploration and development wells in 2005.

Indonesia

ExxonMobil had acreage of 2.5 million net acres at year-end 2005, 1.7 million acres offshore and 0.8 million acres onshore.

The production sharing contract for the Cepu Contract Area was signed in September 2005 by PT Pertamina (Persero) and ExxonMobil and approved by the Government of Indonesia. The term of the contract is 30 years. PT Pertamina (Persero) and ExxonMobil are currently working on the Joint Operation Agreement (JOA).

Japan

ExxonMobil's net offshore acreage was 36 thousand acres at year-end 2005.

Malaysia

ExxonMobil has interests in production sharing contracts covering 0.5 million net acres offshore Malaysia at year-end 2005. During the year, a total of 25.6 net development wells were completed. Development and infill drilling wells were successfully completed at six platforms: Guntong-F, Irong Barat-C, Tapis-C, Semangkok-B, Angsi-A and Tiong-A. First oil was produced from the Guntong-F and Irong Barat-C platforms in 2005. Drilling activities are currently ongoing at Jerneh-A.

Papua New Guinea

A total of 0.5 million net onshore acres were held by ExxonMobil at year-end 2005, with 0.6 net development wells completed during the year.

Oatar

Production and development activities continued on natural gas projects in Qatar. Liquefied natural gas (LNG) operating companies include:

Oatar Liquefied Gas Company Limited — (OG I)

Qatar Liquefied Gas Company Limited (II) - (QG II)

Ras Laffan Liquefied Natural Gas Company Limited — (RL I)

Ras Laffan Liquefied Natural Gas Company Limited (II) - (RL II)

Ras Laffan Liquefied Natural Gas Company Limited (3) — (RL 3)

In addition, production commenced in 2005 for ExxonMobil's Al Khaleej Gas (AKG) project which supplies pipeline gas to domestic industrial customers. The AKG project will have a target peak production rate of 675 million of cubic feet per day (gross) and produce associated condensate, and commencing in early 2006 will produce LPG (Liquefied Petroleum Gas).

At the end of 2005, 54 (gross) wells supplied natural gas to currently producing LNG and pipeline gas sales facilities and drilling is underway to complete wells that will supply the new QG II, RL II and RL 3 projects. A total of 9.1 net exploration and development wells were completed in 2005.

Index to Financial Statements

Qatar LNG capacity volumes at year-end included 9.7 MTA (millions of metric tons per annum) in QG I Trains 1-3 and a combined 16.0 MTA in RL I Trains 1-2 and RL II Trains 3-4. During 2005, production commenced at RL II Train 4, and an expansion project was completed to increase the capacity of QG I Trains 1-3 to 9.7 MTA. Construction of QG II Trains 4-5 will add planned capacity of 15.6 MTA when complete. In addition, construction of RL II Train 5 and RL 3 Trains 6-7 will add planned capacity of 4.7 MTA and 15.6 MTA, respectively, when complete.

The conversion factor to translate Qatar LNG volumes (millions of metric tons - MT) into gas volumes (billions of cubic feet - BCF) is dependent on the gas quality and the quality of the LNG produced. The conversion factors are approximately 46 BCF/MT for QG I Trains 1-3, RL I Trains 1-2, RL II Trains 3 and 5, and approximately 49 BCF/MT for QG II Trains 4-5, RL II Train 4, and RL 3 Trains 6-7.

Republic of Yemen

ExxonMobil's net acreage in the Republic of Yemen production sharing areas totaled 9.5 thousand acres onshore at year-end, During the year, 1.1 net development wells were drilled and completed.

Thailand

ExxonMobil's net onshore acreage in Thailand concessions totaled 21 thousand acres at year-end 2005.

United Arab Emirates

ExxonMobil's net acreage in the Abu Dhabi oil concession was 0.5 million acres at year-end 2005, 0.4 million acres onshore and 0.1 million acres offshore. During the year, 6.7 net development wells were completed. The Bab Facility expansion project was completed and commissioning activities were begun for the Northeast Bab Phase I development project.

RUSSIA/CASPIAN

Azerbaijan

At year-end 2005, ExxonMobil's net acreage, located in the Caspian Sea offshore of Azerbaijan, totaled 0.1 million acres. During the year, 0.7 net development wells were completed. At the Azeri-Chirag-Gunashli (ACG) development, the first phase of full-field development at Central Azeri came online in March 2005 and full-field oil production increased to 400 thousand barrels of oil per day (gross) by year-end. Commissioning of the second phase at West Azeri was in-progress at year-end, and construction is under way on the third phase at Deep Water Gunashli.

Kazakhstan

ExxonMobil's net acreage totaled 0.3 million acres onshore and 0.2 million acres offshore at year-end 2005, with 3.2 net exploration and development wells completed during 2005. At Tengiz, construction of the 300 thousand barrels of oil per day (gross) expansion project continued through 2005. Engineering and construction of the initial phase of the Kashagan field continued during 2005.

Russia

ExxonMobil's net acreage holdings at year-end 2005 were 85 thousand acres, all offshore. A total of 3.6 net development wells were completed in the Chayvo field during the year. Production from the

Index to Financial Statements

field began in October 2005 through an early production system for domestic Russian oil and gas sales. Construction and drilling activities are progressing on Phase 1 full-field production and export systems. Phase 1 facilities include an offshore platform, onshore drill site for extended-reach drilling to offshore oil zones, an onshore processing plant, an oil pipeline from Sakhalin Island to the Russian mainland and a mainland terminal for shipment of oil by tanker.

SOUTH AMERICA

Argentina

ExxonMobil's net acreage totaled 0.2 million onshore acres at year-end 2005, and there were 1.5 net development wells completed during the year.

Venezuela

ExxonMobil's net year-end 2005 acreage holdings totaled 0.1 million onshore acres, with 7.1 net development wells completed during the year.

WORLDWIDE EXPLORATION

At year-end 2005, exploration activities were underway in several areas in which ExxonMobil has no established production operations and thus are not included above. A total of 42.8 net million acres were held at year-end 2005, and 0.8 net exploration wells were completed during the year in these countries.

Information with regard to mining activities follows:

Syncrude Operations

Syncrude is a joint-venture established to recover shallow deposits of tar sands using open-pit mining methods, to extract the crude bitumen, and to produce a high-quality, light (32 degree API), sweet, synthetic crude oil. The Syncrude operation, located near Fort McMurray, Alberta, Canada, exploits a portion of the Athabasca Oil Sands Deposit. The location is readily accessible by public road. The produced synthetic crude oil is shipped from the Syncrude site to Edmonton, Alberta by Alberta Oil Sands Pipeline Ltd. Since start-up in 1978, Syncrude has produced about 1.6 billion barrels of synthetic crude oil. Imperial Oil Limited is the owner of a 25 percent interest in the joint-venture. Exxon Mobil Corporation has a 69.6 percent interest in Imperial Oil Limited.

Operating License and Leases

Syncrude has an operating license issued by the Province of Alberta which is effective until 2035. This license permits Syncrude to mine tar sands and produce synthetic crude oil from approved development areas on tar sands leases. Syncrude holds eight tar sands leases covering approximately 252,000 acres in the Athabasca Oil Sands Deposit which were issued by the Province of Alberta. The leases are automatically renewable as long as tar sands operations are ongoing or the leases are part of an approved development plan. Syncrude leases 10, 12, 17, 22 and 34 (containing proven reserves) and leases 29, 30 and 31 (containing no proven reserves) are included within a development plan approved by the Province of Alberta. There were no known previous commercial operations on these leases prior to the start-up of operations in 1978.

Operations, Plant and Equipment

Operations at Syncrude involve three main processes: open pit mining, extraction of crude bitumen and upgrading of crude bitumen into synthetic crude oil. In the Base mine (lease 17), the mining and transportation system uses draglines, bucketwheel reclaimers and belt conveyors. In the

Index to Financial Statements

North mine (leases 17 and 22) and in the Aurora mine (leases 10, 12 and 34), truck, shovel and hydrotransport systems are used. Production from the Aurora mine commenced in 2000. The extraction facilities, which separate crude bitumen from sand, are capable of processing approximately 545,000 tons of tar sands a day, producing 110 million barrels of crude bitumen a year. This represents recovery capability of about 92 percent of the crude bitumen contained in the mined tar sands.

Crude bitumen extracted from tar sands is refined to a marketable hydrocarbon product through a combination of carbon removal in two large, high-temperature, fluid-coking vessels and by hydrogen addition in high-temperature, high-pressure, hydrocracking vessels. These processes remove carbon and sulfur and reformulate the crude into a low viscosity, low sulfur, high-quality synthetic crude oil product. In 2005, this upgrading process yielded 0.853 barrels of synthetic crude oil per barrel of crude bitumen. In 2005 about 49 percent of the synthetic crude oil was processed by Edmonton area refineries and the remaining 51 percent was pipelined to refineries in eastern Canada and exported, primarily to the United States. Electricity is provided to Syncrude by a 270 megawatt electricity generating plant and an 80 megawatt electricity generating plant, both located at Syncrude. The generating plants are owned by the Syncrude participants. Imperial Oil Limited's 25 percent share of net investment in plant, property and equipment, including surface mining facilities, transportation equipment and upgrading facilities was about \$2.8 billion at year end 2005.

Synthetic Crude Oil Reserves

The crude bitumen is contained within the unconsolidated sands of the McMurray Formation. Ore bodies are buried beneath 50 to 150 feet of overburden, have bitumen grades ranging from 4 to 14 weight percent and ore thickness of 115 to 160 feet. Estimates of synthetic crude oil reserves are based on detailed geological and engineering assessments of in-place crude bitumen volume, the mining plan, historical extraction recovery and upgrading yield factors, installed plant operating capacity and operating approval limits. The in-place volume, depth and grade are established through extensive and closely spaced core drilling. Proven reserves include the operating Base and North mines and the Aurora mine. In accordance with the approved mining plan, there are an estimated 1,890 million tons of extractable tar sands in the Base and North mines, with an average bitumen grade of 10.6 weight percent. In addition, at the Aurora mine, there are an estimated 4,485 million tons of extractable tar sands at an average bitumen grade of 11.2 weight percent. After deducting royalties payable to the Province of Alberta, Imperial Oil Limited estimates that its 25 percent net share of proven reserves at year end 2005 was equivalent to 738 million barrels of synthetic crude oil.

In 2001, the Syncrude owners endorsed a further development of the Syncrude resource in the area and expansion of the upgrading facilities. The Syncrude Aurora 2 and Upgrader Expansion 1 project adds a remote mining train and expands the central processing and upgrading plant. The Aurora 2 mining and extraction development became fully operational in 2004. The Upgrader Expansion will be completed in 2006. When completed, this project will increase production capacity to 350 thousand barrels of synthetic crude oil per day (gross).

Index to Financial Statements

ExxonMobil Share of Net Proven Syncrude Reserves(1)

	Synthetic Crude Oil			
	Base Mine and North Mine	Aurora Mine	Total	
January 1, 2005	217	(millions of barrels) 540	757	
Revision of previous estimate Production	(9)	(10)	(19)	
December 31, 2005	208	530	738	

(1) Net reserves are the company's share of reserves after deducting royalties payable to the Province of Alberta.

Syncrude Operating Statistics (total operation)

	2005	2004	2003	2002	2001
Operating Statistics Total mined volume (millions of cubic yards)(1) Mined volume to tar sands ratio(1)	97.1 1.02	100.3 0.94	109.2 1.15	102.0 1.05	118.3
Tar sands mined (millions of tons) Average bitumen grade (weight percent)	168.0 11.1	188.0 11.1	168.0 11.0		181.2 11.0
Crude bitumen in mined tar sands (millions of tons) Average extraction recovery (percent)	18.6 89.1	20.9 87.3	18.5 88.6	19.2 89.9	19.9 87.0
Crude bitumen production (millions of barrels)(2) Average upgrading yield (percent)	94.2 85.3	103.3 85.5	92.3 86.0	97.8 86.3	97.6 84.5
Gross synthetic crude oil produced (millions of barrels)	79.3	88.4	78.4	84.8	82.4
ExxonMobil net share (millions of barrels)(3)	19	22	19	21	19

⁽¹⁾ Includes pre-stripping of mine areas and reclamation volumes.

Item 3. Legal Proceedings.

Regarding a previously reported matter, the Corporation and the Texas Commission on Environmental Quality ("TCEQ") have agreed to settle a Notice of Enforcement issued on August 29, 2003, alleging leak detection and repair violations and inadequate notifications of several emissions events as required by air quality regulations at ExxonMobil Oil Corporation's ("EMOC") Beaumont, Texas refinery. Under the terms of the settlement, EMOC has agreed to pay a civil penalty totaling \$80,444, half of which will be paid through a supplemental environmental project involving county vehicle retrofits. The parties expect to execute an Agreed Order by the end of March 2006.

Regarding a previously reported matter, the Corporation signed an Administrative Consent Agreement in December 2005 setting forth the terms of settlement of an Administrative Consent Agreement and Enforcement Order regarding underground oil storage tank and air activities received from the Maine Department of Environmental Protection ("MDEP") in March 2005. The MDEP alleged violations at 12 service stations of regulations under the state's Stage II vapor

⁽²⁾ Crude bitumen production is equal to crude bitumen in mined tar sands multiplied by the average extraction recovery and the appropriate conversion factor.

⁽³⁾ Reflects ExxonMobil's 25 percent interest in production less applicable royalties payable to the Province of Alberta.

Index to Financial Statements

recovery program and underground storage tank program, including those relating to record-keeping, monitoring, equipment, clean-up and testing. The Corporation paid a civil penalty of \$269,400 for settlement of the alleged violations. The Agreement is awaiting final execution by the State of Maine.

In another previously reported matter, the Corporation and the Environmental Protection Agency (EPA) filed a Consent Agreement and Final Order with the Administrative Law Judge on January 9, 2006, reflecting the parties' agreement to settle an Administrative Complaint captioned "In the Matter of ExxonMobil Production Company". The EPA had alleged violations of the Clean Water Act at the Hawkins Field (in Wood County, Texas) related to 13 spills of produced water into potential waters of the United States occurring from June 2000 to August 2004. The Corporation has agreed to pay a \$31,000 civil penalty and to perform a supplemental environmental project valued at \$91,000 relating to enhanced detection of upset conditions at the Hawkins Field.

Refer to the relevant portions of note 14 beginning on page 68 of the Financial Section of this report for additional information on legal proceedings.

Item 4. Submission of Matters to a Vote of Security Holders.

None.

Executive Officers of the Registrant [pursuant to Instruction 3 to Regulation S-K, Item 401(b)].

Name	Age as of March 16, 2006	Title (Held Office Since)
R. W. Tillerson	53	Chairman of the Board (2006)
D. D. Humphreys	58	Senior Vice President (2006) and Treasurer (2004)
S. R. McGill	63	Senior Vice President (2004)
J. S. Simon	62	Senior Vice President (2004)
M. W. Albers	49	President, ExxonMobil Development Company (2004)
A. T. Cejka	54	Vice President (2004)
H. R. Cramer	55	Vice President (1999)
P. J. Dingle	57	Vice President (2003)
M. J. Dolan	52	Vice President (2004)
M. E. Foster	62	Vice President (2004)
H. H. Hubble	53	Vice President—Investor Relations and Secretary (2004)
G. L. Kohlenberger	53	Vice President (2002)
C. W. Matthews	61	Vice President and General Counsel (1995)
P. T. Mulva	54	Vice President and Controller (2004)
S. D. Pryor	56	Vice President (2004)
P. E. Sullivan	62	Vice President and General Tax Counsel (1995)

For at least the past five years, Messrs. Cramer, Humphreys, Matthews, McGill, Simon and Sullivan have been employed as executives of the registrant. Mr. Tillerson was a Senior Vice President and then President, a title he continues to hold, before becoming Chairman of the Board. Mr. Humphreys was Vice President and Controller and then Vice President and Treasurer before becoming Senior Vice President and Treasurer. Mr. McGill was President of ExxonMobil Production Company before becoming Senior Vice President. Mr. Simon was President of ExxonMobil Refining & Supply Company before becoming Senior Vice President. Mr. Mulva was Vice President—Investor Relations and Secretary before becoming Vice President and Controller.

Index to Financial Statements

The following executive officers of the registrant have also served as executives of the subsidiaries, affiliates or divisions of the registrant shown opposite their names during the five years preceding December 31, 2005.

Esso Exploration and Production Chad Inc.	Albers
Esso Malaysia Berhad	Dingle
Esso Production Malaysia Inc.	Dingle
Exxon Neftegas Limited	Tillerson
Exxon Ventures (CIS) Inc.	Tillerson
ExxonMobil Chemical Company	Dolan and Pryor
ExxonMobil Development Company	Albers, Foster and Tillerson
ExxonMobil Exploration Company	Cejka
ExxonMobil Fuels Marketing Company	Cramer
ExxonMobil Gas & Power Marketing Company	Dingle
ExxonMobil Global Services Company	Kohlenberger
ExxonMobil Lubricants & Petroleum Specialties Company	Kohlenberger and Pryor
ExxonMobil Production Company	Albers and Foster
ExxonMobil Refining & Supply Company	Dolan, Hubble and Pryor
Imperial Oil Limited	Mulva
Mobil Business Resources Corporation	Kohlenberger

Officers are generally elected by the Board of Directors at its meeting on the day of each annual election of directors, with each such officer serving until a successor has been elected and qualified.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Reference is made to the quarterly information which appears on page 30 of the Financial Section of this report.

Issuer Purchases of Equity Securities for Quarter Ended December 31, 2005

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
October, 2005	31,108,634	57.96	31,108,634	2
November, 2005	30,576,300	57.83	30,576,300	
December, 2005	30,481,964	58.32	30,481,964	
Total	92,166,898	58.04	92,166,898	(See note 1)

Note I—On August 1, 2000, the Corporation announced its intention to resume purchases of shares of its common stock for the treasury both to offset shares issued in conjunction with company benefit plans and programs and to gradually reduce the number of shares outstanding. The announcement did not specify an amount or expiration date. The Corporation has continued to purchase shares since this announcement and to report purchased volumes in its quarterly earnings releases. Purchases may be made in both the open market and through negotiated transactions, and purchases may be increased, decreased or discontinued at any time without prior notice.

Index to Financial Statements

Item 6. Selected Financial Data.

Years Ended December 31,									
	2005	Ī.	2004		2003		2002		2001
	(millions of dollars, except per share amounts)								
\$	With the second second								08,715
					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$	22,040	\$	21,907
same	e counter	par	ty.						
\$	36,130	\$	25,330	8	20,960	\$	11,011	\$	15,003
			-				449		102
	_		-		1		_		215
	_		\rightarrow		550		-		-
\$	36,130	\$	25,330	\$	21,510	\$	11,460	\$	15,320
S	5.76	\$	3.91	\$	3.16	\$	1.62	\$	2.19
	_		-		_		0.07		0.01
	_		_		-		-		0.03
1.					0.08	6	_		-
\$	5.76	\$	3.91	\$	3.24	\$	1.69	\$	2.23
\$	5.71	\$	3.89	\$	3.15	\$	1.61	\$	2.17
	-		_		-		0.07		0.01
	-		-		-		-		0.03
١	-		_	2	0.08	1	_	ú	
s	5.71	\$	3.89	\$	3.23	\$	1.68	\$	2.21
\$	1.14	\$	1.06	\$	0.98	\$	0.92	\$	0.91
\$	208,335	\$	195,256	\$	174,278	\$	152,644	\$1	143,174
\$	6,220	\$	5,013	\$	4,756	\$	6,655	\$	7,099
	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	\$358,955 \$30,742 \$30,742 \$36,130 \$36,130 \$5.76 \$5.76 \$5.76 \$5.71 \$1.14 \$208,335	\$ 358,955 \$2 \$ 30,742 \$ \$ 30,742 \$ \$ same counterpar \$ 36,130 \$ \$ 5.76 \$ \$ 5.76 \$ \$ 5.71 \$ \$ 5.71 \$ \$ 1.14 \$ \$ 208,335 \$	\$ 35,742 \$ 27,263 \$ 30,742 \$ 27,263 \$ 36,130 \$ 25,330 \$ 36,130 \$ 25,330 \$ 5.76 \$ 3.91 \$ 5.76 \$ 3.91 \$ 5.71 \$ 3.89 \$ 1.14 \$ 1.06 \$ 208,335 \$ \$195,256	2005 2004	2005 2004 2003	2005 2004 2003	2005 2004 2003 2002	2005 2004 2003 2002

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Reference is made to the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" beginning on page 31 of the Financial Section of this report.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Reference is made to the section entitled "Market Risks, Inflation and Other Uncertainties" beginning on page 40, excluding the part entitled "Inflation and Other Uncertainties," of the Financial Section of this report. All statements other than historical information incorporated in this Item 7A are forward-looking statements. The actual impact of future market changes could differ materially due to, among other things, factors discussed in this report.

Index to Financial Statements

Item 8. Financial Statements and Supplementary Data.

Reference is made to the following in the Financial Section of this report:

- Consolidated financial statements, together with the report thereon of PricewaterhouseCoopers LLP dated February 28, 2006, beginning on page 46 with the section entitled "Report of Independent Registered Public Accounting Firm" and continuing to page 75;
- Quarterly Information (unaudited) appearing on page 30;
- Supplemental Information on Oil and Gas Exploration and Production Activities (unaudited) appearing on pages 76 through 85; and
- Frequently Used Terms (unaudited) on pages 28 and 29.

Financial Statement Schedules have been omitted because they are not applicable or the required information is shown in the consolidated financial statements or notes thereto.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Management's Evaluation of Disclosure Controls and Procedures

As indicated in the certifications in Exhibit 31 of this report, the Corporation's chief executive officer, principal financial officer and principal accounting officer have evaluated the Corporation's disclosure controls and procedures as of December 31, 2005. Based on that evaluation, these officers have concluded that the Corporation's disclosure controls and procedures are effective in ensuring that material information required to be in this annual report is made known to them on a timely basis.

Management's Report on Internal Control over Financial Reporting

Management, including the Corporation's chief executive officer, principal financial officer and principal accounting officer, is responsible for establishing and maintaining adequate internal control over the Corporation's financial reporting. Management conducted an evaluation of the effectiveness of internal control over financial reporting based on the Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that Exxon Mobil Corporation's internal control over financial reporting was effective as of December 31, 2005.

Management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2005, was audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report beginning on page 46 of the Financial Section of this report.

Changes in Internal Control over Financial Reporting

There were no changes during the Corporation's last fiscal quarter that materially affected, or are reasonably likely to materially affect the Corporation's internal control over financial reporting.

Item 9B. Other Information.

None.

Index to Financial Statements

PART III

Item 10. Directors and Executive Officers of the Registrant.

Incorporated by reference to the following from the registrant's definitive proxy statement for the 2006 annual meeting of shareholders (the "2006 Proxy Statement"):

- · The section entitled "Election of Directors";
- The portion entitled "Section 16(a) Beneficial Ownership Reporting Compliance" of the section entitled "Executive Compensation Tables";
- The portion entitled "Code of Ethics and Business Conduct" of the section entitled "Corporate Governance Guidelines"; and
- The "Audit Committee" portion and the membership table of the section entitled "Board Committees".

Item 11. Executive Compensation.

Incorporated by reference to the section entitled "Director Compensation" and the section entitled "Executive Compensation Tables" of the registrant's 2006 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

Incorporated by reference to the section entitled "Director and Executive Officer Stock Ownership" and the portion entitled "Equity Compensation Plan Information" of the section entitled "Executive Compensation Tables" of the registrant's 2006 Proxy Statement.

Item 13. Certain Relationships and Related Transactions.

The Registrant has concluded that it has no disclosable matters under this item. Additional information regarding this determination is incorporated by reference to the portion entitled "Director and Officer Relationships" of the section entitled "Election of Directors" in the registrant's 2006 Proxy Statement.

Item 14. Principal Accounting Fees and Services.

Incorporated by reference to the section entitled "Ratification of Independent Auditors" of the registrant's 2006 Proxy Statement.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

- (a) (1) and (2) Financial Statements: See Table of Contents on page 25 of the Financial Section of this report.
- (a) (3) Exhibits: See Index to Exhibits beginning on page 89 of this report.

Index to Financial Statements

FINANCIAL SECTION

TABLE OF CONTENTS

Business Profile	26
Financial Summary	27
Frequently Used Terms	28
Quarterly Information	30
Management's Discussion and Analysis of Financial Condition and Results of Operations	44
Functional Earnings	31
Forward-Looking Statements	32
Overview	32
Business Environment and Risk Assessment	32
Review of 2005 and 2004 Results	33
Liquidity and Capital Resources	35
Capital and Exploration Expenditures	39
Taxes	39
Asset Retirement Obligations and Environmental Costs	40
Market Risks, Inflation and Other Uncertainties	40
Recently Issued Statements of Financial Accounting Standards	41
Critical Accounting Policies	42
Management's Report on Internal Control Over Financial Reporting	46
Report of Independent Registered Public Accounting Firm	46
Consolidated Financial Statements	
Statement of Income	48
Balance Sheet	49
Statement of Shareholders' Equity	50
Statement of Cash Flows	51
Notes to Consolidated Financial Statements	
1. Summary of Accounting Policies	52
2. Accounting for Suspended Exploratory Well Costs	55
3. Miscellaneous Financial Information	58
4. Cash Flow Information	58
5. Additional Working Capital Information	58
6. Equity Company Information	59
7. Investments and Advances	60
8. Property, Plant and Equipment and Asset Retirement Obligations	60
9. Leased Facilities	61
10. Earnings Per Share	61
11. Financial Instruments and Derivatives	62
12. Long-Term Debt	62
13. Incentive Program	67
14. Litigation and Other Contingencies	68
15. Annuity Benefits and Other Postretirement Benefits	70
16. Disclosures about Segments and Related Information	73
17. Income, Excise and Other Taxes	75
Supplemental Information on Oil and Gas Exploration and Production Activities	76
Operating Summary	86

Index to Financial Statements

BUSINESS PROFILE

		Earnings After Income Taxes			Cap	rn on rage oital loyed	Capital and Exploration Expenditures		
Financial	2005	2004	2005	2004		2004	2005	2004	
Upstream		(millions	of dollars)		(perc	cent)	(millions	of dollars)	
United States	\$ 6,200	\$ 4,948	\$ 13,491	\$ 13,355	46.0	37.0	\$ 2,142	\$ 1,922	
Non-U.S.	18,149	11,727	39,770				12,328		
Total	\$24,349	\$16,675	\$ 53,261	\$ 50,642	45.7	32.9	\$14,470	\$11,715	
Downstream		-						-	
United States	\$ 3,911	\$ 2,186	\$ 6,650	\$ 7,632	58.8	28.6	\$ 753	\$ 775	
Non-U.S.	4,081	3,520	18,030	19,541	22.6	18.0	1,742	1,630	
Total	\$ 7,992	\$ 5,706	\$ 24,680	\$ 27,173	32.4	21.0	\$ 2,495	\$ 2,405	
Chemical									
United States	\$ 1,186	\$ 1,020	\$ 5,145	\$ 5,246	23.1	19.4	\$ 243	\$ 262	
Non-U.S.	2,757	2,408	8,919	9,362	30.9	25.7	411	428	
Total	\$ 3,943	\$ 3,428	\$ 14,064	\$ 14,608	28.0	23.5	\$ 654	\$ 690	
Corporate and financing	(154)	(479)	24,956	14,916	_	_	80	75	
Total	\$36,130	\$25,330	\$116,961	\$107,339	31.3	23.8	\$17,699	\$14,885	

See Frequently Used Terms on pages 28 and 29 for a definition and calculation of capital employed and return on average capital employed.

Operating	2005	2004
Net liquids production	(thousands of be	arrels daily)
United States	477	557
Non-U.S.	2,046	2,014
Total	2,523	2,571
	(millions of cub	ic feet daily)
Natural gas production available for sale		
United States	1,739	1,947
Non-U.S.	7,512	7,917
Total	9,251	9,864
	(thousands of oil barrels d	
Oil-equivalent production (1)	4,065	4,215

(i) Gas converted to oil-equivalent at 6 million cubic feet = 1 thousand barrels.

	2005	2004
Pateologies and disat color	(thousands of l	parrels daily)
Petroleum product sales United States	2.915	2,872
Non-U.S.	5,342	5,338
Total	8,257	8,210
	(thousands of t	parrels daily)
Refinery throughput		. 012
United States	1,794	1,850
Non-U.S.	3,929	3,863
Total	5,723	5,713

Chemical prime product sales United States Non-U.S. Total

(thousands of metric tons)

1	10,369	11,521
	16,408	16,267
	26,777	27,788
-		

Index to Financial Statements

FINANCIAL SUMMARY

	2	2005	_	2004		2003	_	2002	į	2001
Salas and other ways	0.0			ons of dolla						00 716
Sales and other operating revenue (1) Earnings	\$3	58,955	52	291,252	5.	237,054	34	200,949	\$2	208,715
Upstream		24 340	•	16,675	•	14 502	\$	9,598		10,736
Downstream	Ф	7,992	D	5,706	D	3,516	D.	1,300	φ	4,227
Chemical		3,943		3,428		1,432		830		707
Corporate and financing		(154)		(479)		1,510		(442)		(142)
Merger-related expenses		0.00		1				(275)		(525)
Income from continuing operations	\$	36,130	\$	25,330	\$	20,960	\$	11,011	\$	15,003
Discontinued operations		_				-		449		102
Extraordinary gain		_		-		-		-		215
Accounting change			_	_	4	550	-	_		-
Net income	\$	36,130	\$	25,330	\$	21,510	\$	11,460	\$	15,320
Net income per common share		Total								
Income from continuing operations	\$	5.76	\$	3.91	\$	3.16	\$	1.62	\$	2.19
Net income per common share - assuming dilution		120								
Income from continuing operations	\$	5.71	\$	3.89	\$	3.15	\$	1.61	\$	2.17
Discontinued operations, net of income tax Extraordinary gain, net of income tax				_				0.07		0.01
Cumulative effect of accounting change, net of income tax						0.08				0.03
Net income	\$	5.71	\$	3.89	\$	3.23	\$	1.68	\$	2.21
Net income	3	3.71	•	3.09	9	3.43	-	1.00	9	2,21
Cash dividends per common share	\$	1.14	\$	1.06	\$	0.98	\$	0.92	\$	0.91
Net income to average shareholders' equity (percent)		33.9		26.4		26.2		15.5		21.3
Working capital Ratio of current assets to current liabilities	\$	27,035 1.58	\$	17,396 1.40	\$	7,574 1.20	\$	5,116 1.15	8	5,567 1.18
Additions to property, plant and equipment	\$	13,839	\$	11,986	\$	12,859	\$	11,437	\$	9,989
Property, plant and equipment, less allowances	\$1	07,010	\$	108,639	\$	104,965	\$	94,940	\$	89,602
Total assets	\$2	08,335	\$	195,256	\$	174,278	\$	152,644	\$	143,174
Exploration expenses, including dry holes	\$	964	\$	1,098	\$	1,010	\$	920	\$	1,175
Research and development costs	\$	712	\$	649	\$	618	\$	631	\$	603
Long-term debt	\$	6,220			\$		\$			7,099
Total debt	\$	7,991	\$	8,293	\$	the state of the s	\$	10,748	\$	
Fixed-charge coverage ratio (times)		50.2		36.1		30.8		13.8		17.7
Debt to capital (percent)		6.5		7.3		9.3		12.2		12.4
Net debt to capital (percent) (2)		(22.0)		(10.7)		(1.2)		4.4		5.3
Shareholders' equity at year end	\$1	11,186	\$	101,756	\$	89,915				
Shareholders' equity per common share	\$	18,13	\$	15,90	\$	13.69	\$		\$	
Weighted average number of common shares outstanding (millions)		6,266		6,482		6,634		6,753		6,868
Number of regular employees at year end (thousands) (3)		83.7		85.9		88.3		92.5		97.9
CORS employees not included above (thousands) (4)		22.4		19.3		17.4		16.8		19.9

⁽¹⁾ Sales and other operating revenue includes excise taxes of \$30,742 million for 2005, \$27,263 million for 2004, \$23,855 million for 2003, \$22,040 million for 2002 and \$21,907 million for 2001. Includes amounts for purchases/sales contracts with the same counterparty.

Debt net of cash, excluding restricted cash. The ratio of net debt to capital including restricted cash is (28.3) percent for

- (2) 2005.
- (3) Regular employees are defined as active executive, management, professional, technical and wage employees who work full time or part time for the Corporation and are covered by the Corporation's benefit plans and programs.
- (4) CORS employees are employees of company-operated retail sites.

Index to Financial Statements

FREQUENTLY USED TERMS

Listed below are definitions of several of ExxonMobil's key business and financial performance measures. These definitions are provided to facilitate understanding of the terms and their calculation.

CASH FLOW FROM OPERATIONS AND ASSET SALES

Cash flow from operations and asset sales is the sum of the net cash provided by operating activities and proceeds from sales of subsidiaries, investments and property, plant and equipment from the Consolidated Statement of Cash Flows. This cash flow is the total sources of cash from both operating the Corporation's assets and from the divesting of assets. The Corporation employs a long-standing and regular disciplined review process to ensure that all assets are contributing to the Corporation's strategic and financial objectives. Assets are divested when they are no longer meeting these objectives or are worth considerably more to others. Because of the regular nature of this activity, we believe it is useful for investors to consider sales proceeds together with cash provided by operating activities when evaluating cash available for investment in the business and financing activities, including shareholder distributions.

Cash flow from operations and asset sales	2005	2004	2003
	(mi	illions of dolla	ars)
Net cash provided by operating activities	\$48,138	\$40,551	\$28,498
Sales of subsidiaries, investments and property, plant and equipment	6,036	2,754	2,290
Cash flow from operations and asset sales	\$54,174	\$43,305	\$30,788

CAPITAL EMPLOYED

Capital employed is a measure of net investment. When viewed from the perspective of how the capital is used by the businesses, it includes ExxonMobil's net share of property, plant and equipment and other assets less liabilities, excluding both short-term and long-term debt. When viewed from the perspective of the sources of capital employed in total for the Corporation, it includes ExxonMobil's share of total debt and shareholders' equity. Both of these views include ExxonMobil's share of amounts applicable to equity companies, which the Corporation believes should be included to provide a more comprehensive measure of capital employed.

004	2003					
(millions of dollars)						
5,256	\$174,278					
9,701)	(33,597)					
1,554)	(37,839)					
5,285)	(4,945)					
3,914	4,151					
2,630	\$102,048					
	100					
3,280	\$ 4,789					
5,013	4,756					
1,756	89,915					
(1,333)	(1,563)					
3,914	4,151					
2,630	\$102,048					
	5,013 01,756 (1,333)					

Index to Financial Statements

RETURN ON AVERAGE CAPITAL EMPLOYED

Return on average capital employed (ROCE) is a performance measure ratio. From the perspective of the business segments, ROCE is annual business segment earnings divided by average business segment capital employed (average of beginning and end-of-year amounts). These segment earnings include ExxonMobil's share of segment earnings of equity companies, consistent with our capital employed definition, and exclude the cost of financing. The Corporation's total ROCE is net income excluding the after-tax cost of financing, divided by total corporate average capital employed. The Corporation has consistently applied its ROCE definition for many years and views it as the best measure of historical capital productivity in our capital-intensive, long-term industry, both to evaluate management's performance and to demonstrate to shareholders that capital has been used wisely over the long term. Additional measures, which tend to be more cash flow based, are used for future investment decisions.

Return on average capital employed	2005	2004	2003
Net income	\$ 36,130	\$ 25,330	\$21,510
Financing costs (after tax)			
Third-party debt	(1)	(137)	(69)
ExxonMobil share of equity companies	(144)	(185)	(172)
All other financing costs - net (1)	(295)	54	1,775
Total financing costs	(440)	(268)	1,534
Earnings excluding financing costs	\$ 36,570	\$ 25,598	\$19,976
Average capital employed	\$116,961	\$107,339	\$95,373
Return on average capital employed - corporate total	31.3%	23.8%	20.9%

^{(1) &}quot;All other financing costs – net" in 2003 includes interest income (after tax) associated with the settlement of a U.S. tax dispute.

Index to Financial Statements

QUARTERLY INFORMATION

	2005			2004						
	First Quarter	Second Ouarter	Third Quarter	Fourth Quarter	Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Volumes		-	Zum ive	- Campa				-		
				(0	housands of	barrels dail	v)			
Production of crude oil and natural gas										
liquids	2,544		2,451	2,629	2,523	2,635	2,581	2,505	2,565	2,571
Refinery throughput	5,749	5,727	5,764	5,652		5,596	5,589	5,809	5,852	5,713
Petroleum product sales	8,229	8,259	8,217	8,322	8,257	8,126	8,023	8,242	8,446	8,210
Natural gas production available for				(n	nillions of ca	bic feet daii	(ע			
sale	10,785	8,709	7,716	9,822	9,251	11,488	9,061	8,488	10,430	9,864
				(thousan	ds of oil-equ	ivalent barr	els daily)			
Oil-equivalent production (1)	4,341	3,919	3,737	4,266	4,065	4,550	4,091	3,920	4,303	4,215
					thousands o					
Chemical prime product sales	6,938	6,592	6,955	6,292	26,777	6,792	6,930	7,117	6,949	27,788
Summarized financial data										
Salan and ather as supting a service (2)	070 475	00 000	06.701	06 100	7	of dollars)	co 220	74.054	01 110	201 262
Sales and other operating revenue (2)				20070	358,955	Charles To Security			10.00	
Gross profit (3)					136,664					
Net income	\$ 7,860	7,640	9,920	10,710	36,130	\$ 5,440	5,790	5,680	8,420	25,330
Per share data					746 G2 TT 3	TO SACRO				
Natingana per common above	\$ 1.23	1.21	1.60	1.72		s 0.83	0.89	0.88	1.31	3.91
Net income per common share Net income per common share –	\$ 1.23	1.21	1.00	1./2	5.76	\$ 0.03	0.69	0.00	1.51	3.91
assuming dilution	\$ 1.22	1.20	1.58	1.71	5.71	\$ 0.83	0.88	0.88	1.30	3.89
Dividends per common share	\$ 0.27	0.29	0.29	0.29	1.14	\$ 0.25	0.27	0.27	0.27	1.06
Common stock prices										
High	\$ 64.37	61.74	65.96	63.89	65.96	\$ 43.40	45.53	49.79	52.05	52.05
Low	\$ 49.25	52.78	57.60		49.25	\$ 39.91	41.43	44.20	48.18	39.91

⁽¹⁾ Gas converted to oil-equivalent at 6 million cubic feet = 1 thousand barrels.

The price range of ExxonMobil common stock is as reported on the composite tape of the several U.S. exchanges where ExxonMobil common stock is traded. The principal market where ExxonMobil common stock (XOM) is traded is the New York Stock Exchange, although the stock is traded on other exchanges in and outside the United States.

There were 616,344 registered shareholders of ExxonMobil common stock at December 31, 2005. At January 31, 2006, the registered shareholders of ExxonMobil common stock numbered 614,599.

On January 25, 2006, the Corporation declared a \$0.32 dividend per common share, payable March 10, 2006.

⁽²⁾ Includes excise taxes and amounts for purchases/sales with the same counterparty.

⁽³⁾ Gross profit equals sales and other operating revenue less estimated costs associated with products sold.

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

FUNCTIONAL EARNINGS	2005 2004			2003		
Net Income (U.S. GAAP)	(millions of dollars, except per share amoun			mounts)		
Upstream						
United States	S	6,200	\$	4,948	\$	3,905
Non-U.S.		18,149	Ψ	11,727	Ψ	10,597
Downstream		4.01.40		200100		-15,625,0
United States		3,911		2,186		1,348
Non-U.S.		4,081		3,520		2,168
Chemical		1,5,4,5		-		
United States		1,186		1,020		381
Non-U.S.		2,757		2,408		1,051
Corporate and financing		(154)		(479)		1,510
Income from continuing operations	S	36,130	S	25,330	\$	20,960
Accounting change				45.00		550
Net income	\$	36,130	\$	25,330	\$	21,510
Net income per common share	S	5.76	s	3.91	\$	3.24
Net income per common share – assuming dilution	\$	5.71	\$	3.89	\$	3.23
Special items included in net income						
Non-U.S. Upstream						
Gain on Dutch gas restructuring	\$	1,620	\$	-	\$	- 2
Gain on transfer of Ruhrgas shares	\$	-	\$	-	\$	1,700
U.S. Downstream						
Allapattah lawsuit provision	\$	(200)	\$	(550)	\$	-
Non-U.S. Downstream						
Sale of Sinopec shares	\$	310	\$	_	\$	_
Non-U.S. Chemical					120	
Sale of Sinopec shares	\$ \$	150	\$	_	\$	-
Joint venture litigation	\$	390	\$	-	\$	-
Corporate and financing					-	6.9.44
U.S. tax settlement	\$	-	\$	-	\$	2,230

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

FORWARD-LOOKING STATEMENTS

Statements in this discussion regarding expectations, plans and future events or conditions are forward-looking statements. Actual future results, including demand growth and mix; capacity increases; production growth and mix; financing sources; the resolution of contingencies; the effect of changes in prices; interest rates and other market conditions; and environmental and capital expenditures could differ materially depending on a number of factors, such as the outcome of commercial negotiations; changes in the supply of and demand for crude oil, natural gas, and petroleum and petrochemical products; and other factors discussed herein and in Item 1A of ExxonMobil's 2005 Form 10-K.

OVERVIEW

The following discussion and analysis of ExxonMobil's financial results, as well as the accompanying financial statements and related notes to consolidated financial statements to which they refer, are the responsibility of the management of Exxon Mobil Corporation. The Corporation's accounting and financial reporting fairly reflect its straightforward business model involving the extracting, refining and marketing of hydrocarbons and hydrocarbon-based products. The Corporation's business model involves the production (or purchase), manufacture and sale of physical products, and all commercial activities are directly in support of the underlying physical movement of goods. Our consistent, conservative approach to financing the capital-intensive needs of the Corporation has helped ExxonMobil to sustain the "triple-A" status of its long-term debt securities for 87 years.

ExxonMobil, with its resource base, financial strength, disciplined investment approach and technology portfolio, is well-positioned to participate in substantial investments to develop new energy supplies. While commodity prices remain volatile on a short-term basis depending on supply and demand, ExxonMobil's investment decisions are based on our long-term outlook, using a disciplined approach in selecting and pursuing the most attractive investment opportunities. The corporate plan is a fundamental annual management process that is the basis for setting risk-assessed near-term operating and capital objectives in addition to providing the longer-term economic assumptions used for investment evaluation purposes. Volumes are based on individual field production profiles, which are also updated annually. Prices for crude oil, natural gas and refined products are based on corporate plan assumptions developed annually by major region and used for investment evaluation purposes. Potential investment opportunities are tested over a wide range of economic scenarios to establish the resiliency of each opportunity. Once investments are made, a reappraisal process is completed to ensure relevant lessons are learned and improvements are incorporated into future projects. ExxonMobil views return on capital employed as the best measure of historical capital productivity.

BUSINESS ENVIRONMENT AND RISK ASSESSMENT

Long-Term Business Outlook

By 2030, the world's population is expected grow to 8 billion, approximately 25 percent higher than today's level. Coincident with this population increase, the Corporation expects worldwide economic growth to average just under 3 percent per year. This combination of population and economic growth should lead to a primary energy demand increase of approximately 50 percent by 2030. The vast majority (80 percent) of the increase is expected to occur in developing countries.

As demand rises, energy efficiency will become increasingly important, with the pace of improvement likely to accelerate. This accelerated pace is the outcome of expected improvements in personal transportation and power generation driven by the introduction of new technologies, as well as a myriad of other improvements which span the residential, commercial and industrial sectors.

Fossil fuels, including coal, are expected to remain the predominant energy sources with approximately 80 percent share of total energy. Oil and gas alone are expected to be about 60 percent. These well-established fuel sources are the only ones with the versatility and scale to meet the majority of the world's growing energy needs. Nuclear power will likely be a growing option to meet electricity needs. Alternative fuels, such as solar and wind power, will grow rapidly, underpinned by government subsidies and mandates. But even with assumptions of robust 10 percent per year growth, solar and wind are expected to represent just 1 percent of the total energy portfolio by 2030.

Oil demand should grow at 1.4 percent per year, primarily due to the increasing number of light duty vehicles in the transportation sector, partly offset by improvements in fuel efficiency. Natural gas and coal are both expected to grow at 1.8 percent annually driven primarily by increased need for electric power generation. The Corporation expects the liquefied natural gas (LNG) market to quintuple by 2030, helping to meet rising import dependency in Europe, North America and Asia. With equity positions in many of the largest remote gas accumulations in the world, the Corporation is positioned to benefit from its technology advances in gas liquefaction, transportation and regasification that enable distant gas supplies to reach markets economically.

The Corporation expects the world's reserve base to grow not only from new discoveries, but also from increases to known reserves. Technology will underpin these increases. The cost to develop these reserves is also large. According to the International Energy Agency, the investment required to meet total oil and gas energy needs worldwide through 2030 will be about \$200 billion per year, or \$5 trillion in total.

Upstream

ExxonMobil maintains the largest portfolio of development and exploration opportunities among the international oil companies, which enables the selectivity required to optimize total profitability and mitigate overall political and technical risks. As future development projects bring new production on line, the Corporation expects a shift in the geographic mix of its production volumes between now and 2010. Oil and natural gas output from West Africa, the Caspian, the Middle East and Russia is expected to more than double during the next five years based on current capital project execution plans. Currently, these growth areas account for just over 25 percent of the Corporation's production. By the end of the decade, they are expected to generate about 50 percent of total volumes. The remainder of the Corporation's production is expected to be sourced from established areas, including Europe and North America.

Index to Financial Statements

In addition to a changing geographic mix, there will also be a change in the type of opportunities from which volumes are produced. Production using arctic technology, deepwater drilling and production systems, heavy oil recovery processes and LNG is expected to grow from 25 percent to 35 percent of the Corporation's output between now and 2010. The Corporation's overall volume capacity outlook, based on projects coming on stream as anticipated, is for production capacity to grow over the period 2006-2010. However, actual volumes will vary from year to year due to timing of individual project start-ups, operational outages, reservoir performance, regulatory changes, asset sales, severe weather events, price effects under production sharing contracts and other factors described in Item 1A of ExxonMobil's 2005 Form 10-K.

Downstream

The downstream industry environment remains very competitive. While refining margins in 2005 were strong, our long-term real refining margins have declined at a rate of about 1 percent per year over the past 20 years. The intense competition in the retail fuels market has similarly driven down real margins by about 4 percent per year. Global refining capacity is expected to grow at about 1 to 2 percent per year through 2010 with Asia Pacific expected to grow at more than 3 percent per year. ExxonMobil assets are well-positioned to supply the growing demand for petroleum products and our continuous focus on making our refineries more efficient and productive has resulted in significant capacity increases to help meet growing demand at a fraction of the cost of building a new refinery. Our capacity growth rate over the past 10 years at existing facilities has been the equivalent of building a new mid-sized refinery every 3 years.

Refining margins are a function of the difference between what a refinery pays for its raw materials (primarily crude oil) and the market prices for the range of products produced (primarily gasoline, heating oil, jet fuel and fuel oil). Crude oil and many products are widely traded with published prices, including those quoted on multiple exchanges around the world (e.g., New York Mercantile Exchange and International Petroleum Exchange). Prices for these commodities (crude and various products) are determined by the global marketplace and are impacted by many factors, including global and regional supply/demand balances, inventory levels, refinery operations, import/export balances, seasonality and weather and political climate. This global market and trade flow was particularly evident following the 2005 supply disruptions in the United States caused by hurricanes Katrina and Rita. Fuel prices increased when 25 percent of U.S. refining capacity was shut down. Consumers reduced demand, and additional product imports flowed into the United States. Supply and demand came back into balance quickly, with an associated decline in prices.

The objectives of ExxonMobil's Downstream strategies are to position the Corporation to be the industry leader under a variety of market conditions. These strategies include maintaining best-in-class operations in all aspects of the business, maximizing value from leading-edge technology, capitalizing on integration with other ExxonMobil businesses, and providing high quality, valued products and services to the Corporation's customers. ExxonMobil has an ownership interest in 45 refineries, located in 25 countries, with distillation capacity of 6.4 million barrels per day and lubricant basestock manufacturing capacity of about 150 thousand barrels per day. ExxonMobil's fuels and lubes marketing business portfolios include operations in over 150 countries on six continents, serving a globally diverse customer base. World class scale and integration, industry-leading efficiency, leading-edge technology and globally respected brands enable ExxonMobil to take advantage of attractive emerging-growth opportunities around the globe.

Chemical

Petrochemical demand continued to be supported by a strong global economy in 2005, although reduced product availability and demand in the United States in the aftermath of hurricanes Katrina and Rita impacted sales volumes. Asian demand was strong, driven by economic and industrial production growth. ExxonMobil benefited from continued strong reliability of its operations, as well as a portfolio of products that includes many of the largest-volume and highest-growth petrochemicals in the global economy. In addition to being a worldwide supplier of primary petrochemical products, Chemical also has a diverse portfolio of less-cyclical business lines. Chemical's competitive advantages are achieved through its business mix, broad geographic coverage, investment discipline, integration of chemical capacity with large refining complexes or Upstream gas processing, operational excellence, leading proprietary technology and product application expertise.

REVIEW OF 2005 AND 2004 RESULTS

Accou	nting	change
Net income	U.S.	GAAP

	_	550
\$36,130	\$25,330	\$21,510

2005

Net income in 2005 of \$36,130 million was the highest ever for the Corporation, up \$10,800 million from 2004. Net income in 2005 included special items of \$2,270 million, consisting of a \$1,620 million gain related to the Dutch gas restructuring, a \$460 million gain from the sale of the Corporation's stake in Sinopec, a \$390 million gain from the resolution of joint venture litigation and a charge of \$200 million relating to the Allapattah lawsuit provision.

Total assets at December 31, 2005, of \$208 billion increased by approximately \$13 billion from 2004, reflecting strong earnings and the Corporation's active investment program, particularly in the Upstream.

2004

Net income in 2004 of \$25,330 million was up \$3,820 million from 2003. Net income in 2004 included a special charge of \$550 million relating to Allapattah. Interest expense in 2004 increased to \$638 million compared to \$207 million in 2003, reflecting the interest component of the Allapattah lawsuit provision.

Total assets at December 31, 2004, of \$195 billion increased by approximately \$21 billion from 2003, reflecting strong earnings and the Corporation's active investment program, particularly in the Upstream.

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Upstream

	2005 2004	2003
	(millions of dollars)
Upstream		
United States	\$ 6,200 \$ 4,948	\$ 3,905
Non-U.S.	18,149 11,727	10,597
Total	\$24,349 \$16,675	\$14,502

2005

Upstream earnings totaled \$24,349 million, including \$1,620 million from a gain related to the Dutch gas restructuring. Absent this, Upstream earnings increased \$6,054 million from 2004 due to higher liquids and natural gas realizations partly offset by lower production volume. Oil equivalent production was down 4 percent versus 2004 including the impact of hurricanes Katrina and Rita, as well as divestment and entitlement effects. Excluding these impacts, total oil equivalent production decreased by 1 percent. Liquids production of 2,523 kbd (thousands of barrels daily) decreased by 48 kbd from 2004. Production increases from new projects in West Africa, the North Sea and North America were offset by natural field decline in mature areas, the impact of hurricanes Katrina and Rita, as well as divestment and entitlement effects. Natural gas production of 9,251 mcfd (millions of cubic feet daily) decreased 613 mcfd from 2004. Higher volumes from projects in Qatar, the North Sea and North America were offset by mature field decline, the impact of hurricanes Katrina and Rita, maintenance activity, lower European demand, as well as entitlement and divestment impacts. Improved earnings from both U.S. and non-U.S. Upstream operations were driven by higher liquids and natural gas realizations, partly offset by lower production volumes. Earnings from U.S. Upstream operations for 2005 were \$6,200 million, an increase of \$1,252 million. Earnings outside the U.S. for 2005, including the \$1,620 million gain related to the Dutch gas restructuring, were \$18,149 million, an increase of \$6,422 million.

2004

Upstream earnings of \$16,675 million increased \$2,173 million due to higher liquids and natural gas realizations. Upstream earnings for 2003 included a \$1,700 million gain on the transfer of shares in Ruhrgas AG. Absent this, Upstream earnings increased \$3,873 million in 2004. Oil equivalent production was flat with 2003 including price-related entitlement effects and divestment impacts. Excluding these impacts, total oil-equivalent production was up 3 percent versus 2003. Liquids production of 2,571 kbd increased 55 kbd from 2003. Production increases in West Africa and Norway were partly offset by natural field decline in mature areas, entitlement effects and divestment impacts. Natural gas production of 9,864 mcfd in 2004 compared with 10,119 mcfd in 2003. The start-up of an additional LNG train in Qatar and contributions from projects and work programs were more than offset by natural field decline, divestment impacts and entitlement effects. Earnings from U.S. Upstream operations for 2004 of \$4,948 million were \$1,043 million higher than 2003 due to higher realizations partly offset by lower production volumes. Earnings outside the U.S. for 2004 of \$11,727 million were \$1,130 million higher than 2003 due to improved realizations and higher production volumes. Earnings outside the U.S. for 2003 included a \$1,700 million from a gain on the transfer of shares in Ruhrgas AG.

Downstream

	2005	2004 2003
	(million	ns of dollars)
Downstream		
United States	\$3,911 \$	2,186 \$1,348
Non-U.S.	4,081	3,520 2,168
Total	\$7,992 \$	55,706 \$3,516

2005

Downstream earnings totaled \$7,992 million, including a gain of \$310 million for the Sinopec share sale and a special charge

of \$200 million relating to the Allapattah lawsuit provision. Downstream earnings for 2004 also included a charge of \$550 million for Allapattah. Absent these, Downstream earnings increased \$1,626 million from 2004 reflecting stronger worldwide refining margins partly offset by weaker marketing margins. Petroleum product sales of 8,257 kbd increased from 8,210 kbd in 2004. Refinery throughput was 5,723 kbd compared with 5,713 kbd in 2004. U.S. Downstream earnings of \$3,911 million increased by \$1,725 million, including the charges in both years related to Allapattah. Non-U.S. Downstream earnings of \$4,081 million, including a gain for the Sinopec share sale, were \$561 million higher than 2004.

2004

Downstream earnings totaled \$5,706 million, including a special charge of \$550 million relating to Allapattah. Absent this, Downstream earnings increased \$2,740 million due to stronger worldwide refining margins and higher refinery throughput partly offset by weaker marketing margins. Earnings also benefited from a planned reduction in inventories as a result of optimizing operations around the world. Petroleum product sales of 8,210 kbd were 253 kbd higher than 2003, largely related to increased refinery runs due to strong margins and more efficient operations. Refinery throughput was 5,713 kbd compared with 5,510 kbd in 2003. U.S. Downstream earnings of \$2,186 million, including the charge relating to Allapattah, increased by \$838 million. Non-U.S. Downstream earnings of \$3,520 million were \$1,352 million higher than 2003.

Chemical

		2004 2003 as of dollars)
Chemical	ymme	
United States	\$1,186 \$	1,020 \$ 381
Non-U.S.	2,757	2,408 1,051
Total	\$3,943 \$	3,428 \$1,432

2005

Chemical earnings totaled \$3,943 million, including a \$390 million gain from the favorable resolution of joint venture litigation and \$150 million from a gain on the Sinopec share sale. Absent these, Chemical earnings decreased \$25 million from 2004 due to lower volumes, partially offset by higher worldwide margins. Prime product sales were 26,777 kt (thousands of metric tons), a decrease of 1,011 kt from 2004, largely reflecting the impact of hurricanes Katrina and Rita. Prime product sales are total chemical product sales including ExxonMobil's share of equity-company volumes and finished-product transfers to

Index to Financial Statements

the Downstream business. Carbon black oil and sulfur volumes are excluded, U.S. Chemical earnings of \$1,186 million increased by \$166 million. Non-U.S. Chemical earnings increased by \$349 million to \$2,757 million, including the impact of the gain from the resolution of the joint venture litigation of \$390 million and a gain of \$150 million on the Sinopec share sale.

2004

Chemical earnings of \$3,428 million were up \$1,996 million from 2003. Earnings benefited from improved worldwide margins, higher volumes and favorable foreign exchange effects. Prime product sales were a record 27,788 kt, an increase of 1,221 kt from 2003, reflecting improved worldwide demand. U.S. Chemical earnings of \$1,020 million were \$639 million higher than 2003 with higher margins and increased volumes on improved demand. Non-U.S. Chemical earnings of \$2,408 million were \$1,357 million higher than 2003 due to higher margins, strong demand in Asia and favorable foreign exchange effects.

All Other Segments

	2005 (mi)	lions of dolla	2003 ars)
All other segments	(111)	ayan sy assa	
Corporate and financing	\$(154)	\$(479)	\$1,510
Accounting change		-	550
Total	\$(154)	\$(479)	\$2,060

2005

Corporate and financing expenses were \$154 million compared with \$479 million in 2004. The decrease of \$325 million is mainly due to higher interest income.

2004

Corporate and financing expenses in 2004 were \$479 million. The corporate and financing segment contributed \$1,510 million to earnings in 2003, including \$2,230 million relating to the settlement of a long-running U.S. tax dispute. Excluding this item, corporate and financing expenses were down \$241 million mainly due to lower U.S. pension expense.

LIQUIDITY AND CAPITAL RESOURCES

Sources and Uses of Cash

	2005	2004
	(millions o	f dollars)
Net cash provided by/(used in)		
Operating activities	\$ 48,138	\$ 40,551
Investing activities	(10,270)	(14,910)
Financing activities	(26,941)	(18,268)
Effect of exchange rate changes	(787)	532
Increase/(decrease) in cash and cash equivalents	\$ 10,140	\$ 7,905
	Dec	
Cash and cash equivalents	\$ 28,671	\$ 18,531
Cash and cash equivalents - restricted	4,604	4,604
Total cash and cash equivalents	\$ 33,275	\$ 23,135

Cash and cash equivalents were \$28,671 million at the end of 2005, an increase of \$10,140 million, including \$(787) million of foreign exchange rate effects from the general strengthening of the U.S. dollar in 2005. Including restricted cash and cash equivalents of \$4,604 million (see note 3 on page 58 and note 14 on page 68), total cash and cash equivalents were \$33,275 million at the end of 2005. Cash and cash equivalents were \$18,531 million at the end of 2004, an increase of \$7,905 million,

including \$532 million of foreign exchange rate effects from the generally weaker U.S. dollar in 2004. Including restricted cash and cash equivalents of \$4,604 million, total cash and cash equivalents of \$23,135 million at the end of 2004 increased \$12,509 million during the year. Cash flows from operating, investing and financing activities are discussed below. For additional details, see the Consolidated Statement of Cash Flows on page 51.

Although the Corporation issues long-term debt from time to time and maintains a revolving commercial paper program, internally generated funds cover the majority of its financial requirements. The management of cash that may be temporarily available as surplus to the Corporation's immediate needs is carefully controlled, both to optimize returns on cash balances, and to ensure that it is secure and readily available to meet the Corporation's cash requirements as they arise.

The Corporation will need to continually find and develop new fields, and continue to develop and apply new technologies and recovery processes to existing fields, in order to maintain or increase production and resulting cash flows in future periods. After a period of production at plateau rates, it is the nature of oil and gas fields eventually to produce at declining rates for the remainder of their economic life. Averaged over all our existing oil and gas fields and without new projects, ExxonMobil's entitlement production is expected to decline at approximately six percent per year through the end of the decade, consistent with recent historical performance. Decline rates can vary widely by individual field due to a number of factors, including, but not limited to, the type of reservoir, fluid properties, recovery mechanisms, and age of the field. Furthermore, the Corporation's production entitlements for individual fields can vary with price and contractual terms.

The Corporation has long been successful at offsetting the effects of natural field decline through disciplined investments and anticipates similar results in the future. Projects are in progress or planned to increase production capacity. However, these volume increases are subject to a variety of risks including project start-up timing, operational outages, reservoir performance, crude oil and natural gas prices, severe weather events, and regulatory changes. The Corporation's cash flows are also highly dependent on crude oil and natural gas prices.

The Corporation's financial strength, as evidenced by its AAA/Aaa debt rating, enables it to make large, long-term capital expenditures. Capital and exploration expenditures in 2005 were \$17.7 billion, reflecting the corporation's continued active investment program. The Corporation expects spending to continue in this range for the next several years, although actual spending could vary depending on progress of individual projects. The Corporation has a large and diverse portfolio of development projects and exploration opportunities, which helps mitigate the overall political and technical risks of the Corporation's Upstream segment and associated cash flow. Further, due to its financial strength, debt capacity and diverse portfolio of opportunities, the risk associated with failure or delay of any single project would not have a significant impact on the Corporation's liquidity or ability to generate sufficient cash flows for operations and its fixed commitments. The purchase and sale of oil and gas properties have not had a significant impact on the amount or timing of cash flows from operating activities.

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Cash Flow from Operating Activities

2005

Cash provided by operating activities totaled \$48.1 billion in 2005, a \$7.5 billion increase from 2004. Major sources of funds were net income of \$36.1 billion, which increased \$10.8 billion, and non-cash provisions of \$10.3 billion for depreciation and depletion. Contributing to the increased level of cash provided by operating activities in 2005 was the net timing effect of receipts of notes and accounts receivable and payments of accounts and other payables in a rising price environment.

2004

Cash provided by operating activities totaled \$40.6 billion in 2004, a \$12.1 billion increase from 2003. Major sources of funds were net income of \$25.3 billion, which increased \$3.8 billion, and non-cash provisions of \$9.8 billion for depreciation and depletion. Contributing to the increased level of cash provided by operating activities in 2004 was \$2.4 billion of lower company contributions to pension plans and \$3.0 billion of cash received related to the U.S. tax settlement recognized in earnings in 2003.

Cash Flow from Investing Activities

2005

Cash used in investing activities totaled \$10.3 billion in 2005, \$4.6 billion lower than 2004. In 2004, the Corporation pledged \$4.6 billion as bond collateral for a litigation appeal (see 2004 comments below). Spending for property, plant and equipment increased \$1.9 billion. Proceeds from the sales of subsidiaries, investments and property, plant and equipment of \$6.0 billion in 2005 increased \$3.3 billion, including almost \$1.4 billion from the sale of the Corporation's interest in Sinopec.

2004

Cash used in investing activities totaled \$14.9 billion in 2004, \$4.1 billion higher than 2003. Spending for property, plant and equipment decreased \$0.9 billion. Proceeds from the sales of subsidiaries, investments and property, plant and equipment in 2004 increased \$0.5 billion to \$2.8 billion. As discussed in note 14 on page 68, investing activities in 2004 included a pledge by the Corporation of \$4.6 billion of collateral consisting of cash and short-term, high-quality securities to the issuer of a litigation-related appeal bond. This collateral was reported as restricted cash and cash equivalents on the balance sheet.

Cash Flow from Financing Activities

2005

Cash used in financing activities was \$26.9 billion, an increase of \$8.6 billion from 2004, reflecting a higher level of purchases of ExxonMobil shares. Dividend payments on common shares increased to \$1.14 per share from \$1.06 per share and totaled \$7.2 billion, a payout of 20 percent. Total consolidated short-term and long-term debt declined \$0.3 billion to \$8.0 billion at year-end 2005. Shareholders' equity increased \$9.5 billion in 2005, to \$111.2 billion, reflecting \$36.1 billion of net income partly offset by distributions to ExxonMobil shareholders of \$7.2 billion of dividends and \$16.0 billion of purchases of shares of ExxonMobil stock to reduce shares outstanding. Shareholders' equity, and net assets and liabilities, also decreased \$2.6 billion, representing the foreign exchange translation effects of weaker foreign currencies at the end of 2005 on ExxonMobil's operations outside the U.S.

During 2005, Exxon Mobil Corporation purchased 311 million shares of its common stock for the treasury at a gross cost of \$18.2 billion. These purchases were to offset shares issued in conjunction with company benefit plans and programs and to reduce the number of shares outstanding. Shares outstanding were reduced 4.2 percent from 6,401 million at the end of 2004 to 6,133 million at the end of 2005. Purchases were made in both the open market and through negotiated transactions. Purchases may be increased, decreased or discontinued at any time without prior notice.

2004

Cash used in financing activities was \$18.3 billion, an increase of \$3.5 billion from 2003, reflecting a higher level of

purchases of ExxonMobil shares. Dividend payments on common shares increased to \$1.06 per share from \$0.98 per share and totaled \$6.9 billion, a payout of 27 percent. Total consolidated short-term and long-term debt declined \$1.2 billion to \$8.3 billion at year-end 2004. Shareholders' equity increased \$11.8 billion in 2004 to \$101.7 billion, reflecting \$25.3 billion of net income partly offset by distributions to ExxonMobil shareholders of \$6.9 billion of dividends and \$8.0 billion of purchases of shares of ExxonMobil stock to reduce shares outstanding. Shareholders' equity, and net assets and liabilities, also increased \$2.2 billion, representing the foreign exchange translation effects of stronger foreign currencies on ExxonMobil's operations outside the U.S.

During 2004, Exxon Mobil Corporation purchased 218 million shares of its common stock for the treasury at a gross cost of \$10.0 billion. These purchases were to offset shares issued in conjunction with company benefit plans and programs and to reduce the number of shares outstanding. Shares outstanding were reduced 2.5 percent from 6,568 million at the end of 2003 to 6,401 million at the end of 2004. Purchases were made in both the open market and through negotiated transactions.

Index to Financial Statements

Commitments

Set forth below is information about the Corporation's commitments outstanding at December 31, 2005. It provides data for easy reference from the consolidated balance sheet and from individual notes to the consolidated financial statements.

		Payme	nts Due by I	Period	
Commitments	Note Reference Number		2007- 2010 lions of dolla	2011 and Beyond	Total
Long-term debt (1)	12	s —	\$ 583	\$5,637	\$6,220
- Due in one year (2)		515	-	_	515
Asset retirement obligations (3)	8	143	788	2,637	3,568
Pension obligations (4)	15	1,582	1,528	4,961	8,071
Operating leases (5)	9	1,505	3,895	1,560	6,960
Unconditional purchase obligations (6)	14	569	1,909	2,098	4,576
Take-or-pay obligations (7)		983	2,740	2,288	6,011
Firm capital commitments (8)		4,105	2,341	1,129	7,575

This table excludes commodity purchase obligations (volumetric commitments but no fixed or minimum price) which are resold shortly after purchase, either in an active, highly liquid market or under long-term, unconditional sales contracts with similar pricing terms. Examples include long-term, noncancelable LNG and natural gas purchase commitments and commitments to purchase refinery products at market prices. Inclusion of such commitments would not be meaningful in assessing liquidity and cash flow, because these purchases will be offset in the same periods by cash received from the related sales transactions.

Notes:

- (i) Includes capitalized lease obligations of \$197 million. Long-term debt amounts exclude the Corporation's share of equity company debt.
- (2) The amount due in one year is included in notes and loans payable of \$1,771 million (note 5 on page 58).
- (3) The discounted present value of upstream asset retirement obligations, primarily asset removal costs at the completion of field life.
- (4) The amount by which accumulated benefit obligations (ABOs) exceeded the fair value of fund assets for certain U.S. and non-U.S. plans at year end. For funded pension plans, this difference was \$2.8 billion at December 31, 2005 (U.S. \$1.2 billion, non-U.S. \$1.6 billion). For unfunded plans, this was the ABO amount of \$5.3 billion (U.S. \$1.1 billion, non-U.S. \$4.2 billion). The payments by period include expected contributions to funded pension plans in 2006 and estimated benefit payments for unfunded plans in all years.
- (5) Minimum commitments for operating leases, shown on an undiscounted basis, cover drilling equipment, tankers, service stations and other properties.
- (6) Unconditional purchase obligations (UPOs) are those long-term commitments that are noncancelable and that third parties have used to secure financing for the facilities that will provide the contracted goods or services. The undiscounted obligations of \$4,576 million mainly pertain to pipeline throughput agreements and include \$2,324 million of obligations to equity companies. The present value of the total commitments, excluding imputed interest of \$1,248 million, was \$3,328 million.
- (7) Take-or-pay obligations are noncancelable, long-term commitments for goods and services other than UPOs. The undiscounted obligations of \$6,011 million mainly pertain to transportation and refining purchases and include \$2,008 million of obligations to equity companies. The present value of the total commitments, excluding imputed interest of \$1,287 million, totaled \$4,724 million.
- (8) Firm commitments related to capital projects, shown on an undiscounted basis, totaled approximately \$7.6 billion. These commitments were predominantly associated with Upstream projects outside the U.S., of which the two largest

commitments outstanding at the end of 2005 were \$1.9 billion and \$1.4 billion associated with the development of crude oil and natural gas resources in Malaysia and Kazakhstan, respectively. The Corporation expects to fund the majority of these commitments through internal cash flow.

Guarantees

The Corporation and certain of its consolidated subsidiaries were contingently liable at December 31, 2005, for \$3,893 million, primarily relating to guarantees for notes, loans and performance under contracts (note 14 on page 68). This included \$1,020 million representing guarantees of non-U.S. excise taxes and customs duties of other companies, entered into as a normal business practice, under reciprocal arrangements. Also included in this amount were guarantees by consolidated affiliates of \$2,649 million, representing ExxonMobil's share of obligations of certain equity companies. The below mentioned guarantees are not reasonably likely to have a material current or future effect on the Corporation's financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Guarantees of excise taxes/customs duties under reciprocal arrangements Other guarantees Total

		Dec.	31, 2005	
- 1	Equity		Other	
	ompany digations		ird-Party ligations	Total
90		-	of dollars)	
\$	-	\$	1,020	\$1,020
	2,649	0	224	2,873
\$	2,649	\$	1,244	\$3,893
		_		

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Financial Strength

On December 31, 2005, unused credit lines for short-term financing totaled approximately \$5.4 billion (note 5 on page 58).

The table below shows the Corporation's fixed-charge coverage and consolidated debt-to-capital ratios. The data demonstrate the Corporation's creditworthiness. Throughout this period, the Corporation's long-term debt securities maintained the top credit rating from both Standard and Poor's (AAA) and Moody's (Aaa), a rating it has sustained for 87 years.

	2005	2004	2003
Fixed-charge coverage ratio (times)	50.2	36.1	30.8
Debt to capital (percent)	6.5	7.3	9.3
Net debt to capital (percent) (1)	(22.0)	(10.7)	(1.2)
Credit rating	AAA/Aaa	AAA/Aaa	AAA/Aaa

(i) Debt net of cash, excluding restricted cash. The ratio of net debt to capital including restricted cash is (28.3) percent for 2005

Management views the Corporation's financial strength, as evidenced by the above financial ratios and other similar measures, to be a competitive advantage of strategic importance. The Corporation's sound financial position gives it the opportunity to access the world's capital markets in the full range of market conditions, and enables the Corporation to take on large, long-term capital commitments in the pursuit of maximizing shareholder value.

The Corporation makes limited use of derivative instruments, which are discussed in Risk Management on page 41 and note 11 on page 62.

Litigation and Other Contingencies

As discussed in note 14 to the Consolidated Financial Statements a number of lawsuits, including class actions, were brought in various courts against Exxon Mobil Corporation and certain of its subsidiaries relating to the accidental release of crude oil from the tanker Exxon Valdez in 1989. The vast majority of the compensatory claims have been resolved and paid. All of the punitive damage claims were consolidated in the civil trial that began in 1994. The first judgment from the United States District Court for the District of Alaska in the amount of \$5 billion was vacated by the United States Court of Appeals for the Ninth Circuit as being excessive under the Constitution. The second judgment in the amount of \$4 billion was vacated by the Ninth Circuit panel without argument and sent back for the District Court to reconsider in light of the recent U.S. Supreme Court decision in Campbell v. State Farm. The most recent District Court judgment for punitive damages was for \$4.5 billion plus interest and was entered in January 2004. ExxonMobil and the plaintiffs have appealed this decision to the Ninth Circuit. The Corporation has posted a \$5.4 billion letter of credit. Oral arguments were held before the Ninth Circuit on January 27, 2006. Management believes that the likelihood of the judgment being upheld is remote. While it is reasonably possible that a liability may have been incurred from the Exxon Valdez grounding, it is not possible to predict the ultimate outcome or to reasonably estimate any such potential liability.

In December 2000, a jury in the 15th Judicial Circuit Court of Montgomery County, Alabama, returned a verdict against the Corporation in a dispute over royalties in the amount of \$88 million in compensatory damages and \$3.4 billion in punitive damages in the case of Exxon Corporation v. State of Alabama, et al. The verdict was upheld by the trial court in May 2001. In December 2002, the Alabama Supreme Court vacated the \$3.5 billion jury verdict. The case was retried and in November 2003, a state district court jury in Montgomery, Alabama, returned a verdict against Exxon Mobil Corporation. The verdict included \$63.5 million in compensatory damages and \$11.8 billion in punitive damages. In March 2004, the district court judge reduced the amount of punitive damages to \$3.5 billion. ExxonMobil believes the judgment is not justified by the evidence, that any punitive damage award is not justified by either the facts or the law, and that the amount of the award is grossly excessive and unconstitutional. ExxonMobil has appealed the decision to the Alabama Supreme Court. Management believes that the likelihood of the judgment being upheld is remote. While it is reasonably possible that a liability may have been incurred by ExxonMobil from this dispute over royalties, it is not possible to predict the ultimate outcome or to reasonably estimate any such potential liability. In May 2004, the Corporation posted a \$4.5 billion supersedeas bond as

required by Alabama law to stay execution of the judgment pending appeal. The Corporation has pledged to the issuer of the bond collateral consisting of cash and short-term, high-quality securities with an aggregate value of approximately \$4.6 billion. This collateral is reported as restricted cash and cash equivalents on the Consolidated Balance Sheet. Under the terms of the pledge agreement, the Corporation is entitled to receive the income generated from the cash and securities and to make investment decisions, but is restricted from using the pledged cash and securities for any other purpose until such time the bond is canceled.

In 2001, a Louisiana state court jury awarded compensatory damages of \$56 million and punitive damages of \$1 billion to a landowner for damage caused by a third party that leased the property from the landowner. The third party provided pipe cleaning and storage services for the Corporation and other entities. The Louisiana Fourth Circuit Court of Appeals reduced the punitive damage award to \$112 million in 2005. The Corporation appealed this decision to the Louisiana Supreme Court as it continues to believe that these judgments should be substantially reduced on legal and constitutional grounds. While it is reasonably possible that a liability may have been incurred, it is not possible to predict the ultimate outcome or to reasonably estimate any such potential liability.

Index to Financial Statements

In Allapattah v. Exxon, a jury in the United States District Court for the Southern District of Florida determined in 2001 that a class of Exxon dealers between March 1983 and August 1994 had been overcharged for gasoline. In June 2003, the Eleventh Circuit Court of Appeals affirmed the judgment and in March 2004, denied a petition for Rehearing En Banc. In October 2004, the U.S. Supreme Court granted review as to whether the class in the District Court judgment should include members that individually do not satisfy the \$50,000 minimum amount-in-controversy requirement in federal court. In light of the Supreme Court's decision to grant review of only part of ExxonMobil's appeal, the Corporation took an after-tax charge of \$550 million in the third quarter of 2004 reflecting the estimated liability, after considering potential set-offs and defenses for the claims under review by the Supreme Court. In June 2005, the Supreme Court granted the District Court the right to hear the claims of all class members and the Corporation took an after-tax charge of \$200 million. Class counsel and ExxonMobil are seeking court approval of a settlement of \$1,075 million, pre-tax that would essentially finalize the Corporation's financial obligation in the case; this obligation has been fully accrued. The trial court has preliminarily approved the settlement. Notice has been issued to the class and the final approval hearing will occur in April 2006.

Tax issues for 1986 to 1993 remain pending before the U.S. Tax Court. The ultimate resolution of these issues is not expected to have a materially adverse effect upon the Corporation's operations or financial condition.

Based on a consideration of all relevant facts and circumstances, the Corporation does not believe the ultimate outcome of any currently pending lawsuit against ExxonMobil will have a materially adverse effect upon the Corporation's operations or financial condition. There are no events or uncertainties known to management beyond those already included in reported financial information that would indicate a material change in future operating results or financial condition.

CAPITAL AND EXPLORATION EXPENDITURES

2	005	2	004
U.S.	Non-U.S.	U.S.	Non-U.S.
\$2,142	\$12,328	\$1,922	\$ 9,793
753	1,742	775	1,630
243	411	262	428
80	-	66	9
\$3,218	\$14,481	\$3,025	\$11,860
	\$2,142 753 243 80	\$2,142 \$12,328 753 1,742 243 411 80	U.S. Non-U.S. (millions of dollars) \$2,142 \$12,328 \$1,922 753 1,742 775 243 411 262 80 — 66

(1) Exploration expenses included.

Capital and exploration expenditures in 2005 were \$17.7 billion, reflecting the Corporation's continued active investment program. The Corporation expects spending to continue in this range for the next several years. Actual spending could vary depending on progress of individual projects.

Upstream spending was up 24 percent to \$14.5 billion in 2005, from \$11.7 billion in 2004, as a result of higher spending in growth areas such as Russia, the Caspian, Qatar and West Africa. In addition, spending in the U.S., Australia and the North Sea was also higher. During the past three years, Upstream capital and exploration expenditures averaged \$12.7 billion. The majority of these expenditures are on major development projects, which typically take two to four years from the time of recording proved undeveloped reserves to the start of production from those reserves. The percentage of proved developed reserves has remained relatively stable over the past five years at over 60 percent of total proved reserves, indicating that proved reserves are consistently moved from undeveloped to developed status. Capital and exploration expenditures are not tracked by the undeveloped and developed proved reserve categories. Capital investments in the Downstream totaled \$2.5 billion in 2005, up \$0.1 billion from 2004. Chemical capital expenditures were essentially unchanged from 2004.

TAXES

	2005	(millions of dollars)	2003
Income taxes	\$23,302	\$15,911	\$11,006
Excise taxes	30,742	27,263	23,855
All other taxes and duties	44,571	43,605	40,107

Total	<u>\$98,615</u>	\$86,779	\$74,968
Total effective tax rate	41.4%	40.3%	36.4%

2005

Income, excise and all other taxes totaled \$98.6 billion in 2005, an increase of \$11.8 billion or 14 percent from 2004. Income tax expense, both current and deferred, was \$23.3 billion, \$7.4 billion higher than 2004, reflecting higher pre-tax income in 2005. The effective tax rate was 41.4 percent in 2005, compared to 40.3 percent in 2004. During both periods, the Corporation continued to benefit from the favorable resolution of other tax-related issues. Excise and all other taxes and duties of \$75.3 billion in 2005 increased \$4.4 billion from 2004, reflecting higher prices and foreign exchange effects.

2004

Income, excise and all other taxes totaled \$86.8 billion in 2004, an increase of \$11.8 billion, or 16 percent, from 2003. Income tax expense, both current and deferred, was \$15.9 billion, \$4.9 billion higher than 2003, reflecting higher pretax income in 2004. The effective tax rate was 40.3 percent in 2004, compared to 36.4 percent in 2003. Excluding the income tax effects in 2003 of the gain on the Ruhrgas AG share transfer and the settlement of a U.S. tax dispute, the effective rate in 2004 was similar to 2003. During both periods, the Corporation continued to benefit from the favorable resolution of other tax-related issues. Excise and all other taxes and duties of \$70.9 billion in 2004 increased \$6.9 billion from 2003, reflecting higher prices and foreign exchange effects.

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

ASSET RETIREMENT OBLIGATIONS AND ENVIRONMENTAL COSTS

Asset Retirement Obligations

The fair values of asset retirement obligations are recorded as liabilities on a discounted basis when they are incurred, which is typically at the time assets are installed, with an offsetting amount booked as additions to property, plant and equipment (\$165 million for 2005). Over time, the liabilities are accreted for the increase in their present value, with this effect included in expenses (\$208 million in 2005). Payments made for asset retirement obligations in 2005 were \$193 million, and the ending balance of the obligations recorded on the balance sheet at December 31, 2005, totaled \$3,568 million.

Environmental Costs

	2005 2004 (millions of dollars)
Capital expenditures	\$ 1,240 \$ 1,073
Included in expenses	2,0891,781
Total	\$ 3,329 \$ 2,854

Throughout ExxonMobil's businesses, new and ongoing measures are taken to prevent and minimize the impact of our operations on the air, water and ground. This includes a significant investment in refining technology to manufacture low-sulfur fuels as well as projects to reduce nitrogen oxide and sulfur oxide emissions. ExxonMobil's 2005 worldwide environmental costs for all such preventative and remediation steps were about \$3.3 billion, of which \$1.2 billion were capital expenditures and \$2.1 billion were included in expenses. The total cost for such activities is expected to remain in this range in 2006 and 2007 (with capital expenditures approximately 35 percent of the total).

The Corporation accrues liabilities for environmental liabilities when it is probable that obligations have been incurred and the amounts can be reasonably estimated. This policy applies to assets or businesses currently owned or previously disposed. ExxonMobil has accrued liabilities for probable environmental remediation obligations at various sites, including multiparty sites where the U.S. Environmental Protection Agency has identified ExxonMobil as one of the potentially responsible parties. The involvement of other financially responsible companies at these multiparty sites mitigates ExxonMobil's actual joint and several liability exposure. At present, no individual site is expected to have losses material to ExxonMobil's operations or financial condition. Provisions made in 2005 for environmental liabilities were \$487 million (\$340 million in 2004), included in the \$2.1 billion of 2005 expenses noted above, and the balance sheet reflects accumulated liabilities of \$849 million as of December 31, 2005, and \$643 million as of December 31, 2004.

MARKET RISKS, INFLATION AND OTHER UNCERTAINTIES

Worldwide Average Realizations (1)	2005	2004	2003
Crude oil and NGL (\$/barrel)	\$48.23	\$34.76	\$26.66
Natural gas (\$/kcf)	5.96	4.48	3.98

(1) Consolidated subsidiaries.

Crude oil, natural gas, petroleum product and chemical prices have fluctuated in response to changing market forces. The impacts of these price fluctuations on earnings from Upstream, Downstream and Chemical operations have varied. In the Upstream, based on the 2005 worldwide production levels, a \$1 per barrel change in the weighted-average realized price of oil would have approximately a \$400 million annual after-tax effect on Upstream consolidated plus equity company earnings. Similarly, a \$0.10 per kcf change in the worldwide average gas realization would have approximately a \$200 million annual after-tax effect on Upstream consolidated plus equity company earnings. For any given period, the extent of actual benefit or detriment will be dependent on the price movements of individual types of crude oil, taxes and other government take impacts, price adjustment lags in long-term gas contracts, and crude and gas production volumes. Accordingly, changes in benchmark prices for crude oil and natural gas only provide a broad indicator of changes in the earnings experienced in any particular period.

In the very competitive downstream and chemical environments, earnings are primarily determined by margin capture rather than absolute price levels of products sold. Refining margins are a function of the difference between what a refiner pays for its raw materials (primarily crude oil) and the market prices for the range of products produced. These prices in turn depend on global and regional supply/demand balances, inventory levels, refinery operations, import/export balances and weather.

The global energy markets can give rise to extended periods in which market conditions are adverse to one or more of the Corporation's businesses. Such conditions, along with the capital-intensive nature of the industry and very long lead times associated with many of our projects, underscore the importance of maintaining a strong financial position. Management views the Corporation's financial strength, including the AAA and Aaa ratings of its long-term debt securities by Standard and Poor's and Moody's, as a competitive advantage.

In general, segment results are not dependent on the ability to sell and/or purchase products to/from other segments. Instead, where such sales take place, they are the result of efficiencies and competitive advantages of integrated refinery/chemical complexes. Additionally, intersegment sales are market-related. The products bought and sold between segments can also be acquired in worldwide markets that have substantial liquidity, capacity and transportation capabilities. About 40 percent of the Corporation's intersegment sales are crude oil produced by the Upstream and sold to the Downstream. Other intersegment sales include those between refineries and chemical plants related to raw materials, feedstocks and finished products.

Index to Financial Statements

Although price levels of crude oil and natural gas may rise or fall significantly over the short to medium term due to political events, OPEC actions and other factors, industry economics over the long term will continue to be driven by market supply and demand. Accordingly, the Corporation tests the viability of all of its assets based on long-term price projections. The Corporation's assessment is that its operations will continue to be successful in a variety of market conditions. This is the outcome of disciplined investment and asset management programs. Investment opportunities are tested against a variety of market conditions, including low-price scenarios. As a result, investments that would succeed only in highly favorable price environments are screened out of the investment plan.

The Corporation has had an active asset management program in which underperforming assets are either improved to acceptable levels or considered for divestment. The asset management program involves a disciplined, regular review to ensure that all assets are contributing to the Corporation's strategic and financial objectives. The result has been the creation of a very efficient capital base and has meant that the Corporation has seldom been required to write down the carrying value of assets, even during periods of low commodity prices.

Risk Management

The Corporation's size, strong capital structure, geographic diversity and the complementary nature of the Upstream, Downstream and Chemical businesses reduce the Corporation's enterprise wide risk from changes in interest rates, currency rates and commodity prices. As a result, the Corporation makes limited use of derivative instruments to mitigate the impact of such changes. The Corporation does not engage in speculative derivative activities or derivative trading activities nor does it use derivatives with leveraged features. The Corporation maintains a system of controls that includes the authorization, reporting and monitoring of derivative activity. The Corporation's limited derivative activities pose no material credit or market risks to ExxonMobil's operations, financial condition or liquidity. Note 11 on page 62 summarizes the fair value of derivatives outstanding at year-end and the gains or losses that have been recognized in net income.

The Corporation is exposed to changes in interest rates, primarily as a result of its short-term debt and long-term debt carrying floating interest rates. The impact of a 100-basis-point change in interest rates affecting the Corporation's debt would not be material to earnings, cash flow or fair value. The Corporation's cash balances exceeded total debt at year-end 2005 and 2004.

The Corporation conducts business in many foreign currencies and is subject to exchange rate risk on cash flows related to sales, expenses, financing and investment transactions. The impacts of fluctuations in exchange rates on ExxonMobil's geographically and functionally diverse operations are varied and often offsetting in amount. The Corporation makes limited use of currency exchange contracts, commodity forwards, swaps and futures contracts to mitigate the impact of changes in currency values and commodity prices. Exposures related to the Corporation's limited use of the above contracts are not material.

Inflation and Other Uncertainties

The general rate of inflation in most major countries of operation has been relatively low in recent years, and the associated impact on costs has been countered by cost reductions from efficiency and productivity improvements.

RECENTLY ISSUED STATEMENTS OF FINANCIAL ACCOUNTING STANDARDS

Share-based Payment

In December 2004, the Financial Accounting Standards Board (FASB) issued a revised Statement of Financial Accounting Standards No. 123 (FAS 123R), "Share-based Payment." FAS 123R requires compensation costs related to share-based payments to be recognized in the income statement over the requisite service period. The amount of the compensation cost will be measured based on the grant-date fair value of the instrument issued. FAS 123R is effective for the Corporation as of January 1, 2006, for awards granted or modified after that date and for awards granted prior to that date that have not vested. In 2003, the Corporation adopted a policy of expensing all share-based payments that is consistent with the provisions of FAS 123R, and all prior year outstanding stock option awards have vested. FAS 123R will therefore not materially change the Corporation's existing accounting practices or the amount of share-based compensation recognized in earnings.

The cumulative compensation expense associated with share-based payments made in 2005, 2004 and 2003 has been recognized in the income statement using the "nominal vesting period approach." The full cost of awards given to employees

who have retired before the end of the vesting period has been expensed. The use of a "non-substantive vesting period approach" based on the retirement eligibility age, would not be significantly different from the nominal vesting period approach. The non-substantive vesting period approach will be applicable to grants made after the adoption of FAS 123R on January 1, 2006.

Accounting for Purchases and Sales of Inventory with the Same Counterparty

At its September 2005 meeting, the Emerging Issues Task Force (EITF) reached a consensus on Issue No. 04-13, "Accounting for Purchases and Sales of Inventory with the Same Counterparty." This issue addresses the question of when it is appropriate to measure purchases and sales of inventory at fair value and record them in cost of sales and revenues and when they should be recorded as exchanges measured at the book value of the item sold. The EITF concluded that purchases and sales of inventory with the same counterparty that are entered into in contemplation of one another should be combined and recorded as exchanges measured at the book value of the item sold.

The Corporation records in revenues certain crude oil, natural gas, petroleum product and chemical sales where the Corporation contemporaneously negotiated purchases with the same counterparty. The purchases are recorded in crude oil and product purchases. These transactions are commonly called "buy/sell transactions" and are used to ensure that the right crude oil is available to the Corporation's refineries at the right time and that appropriate products are available

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

to meet customer demand. The Corporation's accounting treatment for these buy/sell transactions is consistent with long standing industry practice. The EITF consensus will result in the Corporation's accounts "Sales and other operating revenue" and "Crude oil and product purchases" on the Consolidated Statement of Income being reduced by associated amounts with no impact on net income. All operating segments will be affected by this change, but the largest impacts are in the Downstream. The EITF consensus will become effective beginning no later than the second quarter of 2006.

The purchase/sale amounts included in revenue for 2005, 2004 and 2003 are shown in note 1 on page 52.

CRITICAL ACCOUNTING POLICIES

The Corporation's accounting and financial reporting fairly reflect its straightforward business model involving the extracting, refining and marketing of hydrocarbons and hydrocarbon-based products. The preparation of financial statements in conformity with U.S. Generally Accepted Accounting Principles (GAAP) requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities. The following summary provides further information about the critical accounting policies and the judgments that are made by the Corporation in the application of those policies.

Oil and Gas Reserves

Evaluations of oil and gas reserves are important to the effective management of Upstream assets. They are integral to making investment decisions about oil and gas properties such as whether development should proceed or enhanced recovery methods should be undertaken. Oil and gas reserve quantities are also used as the basis for calculating unit-of-production depreciation rates and for evaluating impairment. Oil and gas reserves are divided between proved and unproved reserves. Proved reserves are the estimated quantities of crude oil, natural gas and natural gas liquids that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions; i.e., prices and costs as of the date the estimate is made. Unproved reserves are those with less than reasonable certainty of recoverability and include probable reserves. Probable reserves are reserves that are more likely to be recovered than not.

The estimation of proved reserves, which is based on the requirement of reasonable certainty, is an ongoing process based on rigorous technical evaluations, commercial and market assessment, and detailed analysis of well information such as flow rates and reservoir pressure declines. The estimation of proved reserves is controlled by the Corporation through long-standing approval guidelines. Reserve changes are made within a well-established, disciplined process driven by senior level geoscience and engineering professionals (assisted by a central reserves group with significant technical experience) culminating in reviews with and approval by senior management. Notably, no employee is compensated based on the level of proved reserve bookings.

Key features of the reserves estimation process include:

- rigorous peer-reviewed technical evaluations and analysis of well and field performance information (such as flow rates and reservoir pressure declines), and
- a requirement that management make significant funding commitments toward the development of the reserves prior to booking.

Although the Corporation is reasonably certain that proved reserves will be produced, the timing and amount recovered can be affected by a number of factors including completion of development projects, reservoir performance, regulatory approvals and significant changes in long-term oil and gas price levels.

Proved reserves can be further subdivided into developed and undeveloped reserves. The percentage of proved developed reserves has remained relatively stable over the past five years at over 60 percent of total proved reserves (including both consolidated and equity company reserves), indicating that proved reserves are consistently moved from undeveloped to developed status. Over time, these undeveloped reserves will be reclassified to the developed category as new wells are drilled, existing wells are recompleted and/or facilities to collect and deliver the production from existing and future wells are installed. Major development projects typically take two to four years from the time of recording proved reserves to

the start of production from these reserves.

Based on regulatory guidance, the Corporation has reported 2004 and 2005 reserves on the basis of December 31 prices and costs ("year-end prices").

The use of year-end prices for reserves estimation introduces short-term price volatility into the process since annual adjustments are required based on prices occurring on a single day. The Corporation believes that this approach is inconsistent with the long-term nature of the upstream business where production from individual projects often spans multiple decades. The use of prices from a single date is not relevant to the investment decisions made by the Corporation and annual variations in reserves based on such year-end prices are not of consequence to how the business is actually managed.

Revisions can include upward or downward changes in previously estimated volumes of proved reserves for existing fields due to the evaluation or re-evaluation of (1) already available geologic, reservoir or production data, or (2) new geologic, reservoir or production data, or (3) changes to underlying price assumptions used in the determination of reserves. This category can also include changes associated with the performance of improved recovery projects and significant changes in either development strategy or production equipment/facility capacity.

The Corporation uses the "successful efforts" method to account for its exploration and production activities. Under this method, costs are accumulated on a field-by-field basis with certain exploratory expenditures and exploratory dry holes being expensed as incurred. Costs of productive wells and development dry holes are capitalized and amortized on the unit-of-production method for each field. The Corporation uses this accounting policy instead of the "full cost" method because it provides a more timely accounting of the success or failure of the

Index to Financial Statements

Corporation's exploration and production activities. If the full cost method were used, all costs would be capitalized and depreciated on a country-by-country basis. The capitalized costs would be subject to an impairment test by country. The full cost method would tend to delay the expense recognition of unsuccessful projects.

Impact of Oil and Gas Reserves on Depreciation. The calculation of unit-of-production depreciation is a critical accounting estimate that measures the depreciation of upstream assets. It is the ratio of (1) actual volumes produced to (2) total proved developed reserves (those proved reserves recoverable through existing wells with existing equipment and operating methods) applied to the (3) asset cost. The volumes produced and asset cost are known and, while proved developed reserves have a high probability of recoverability, they are based on estimates that are subject to some variability. This variability has generally resulted in net upward revisions of proved reserves in existing fields, as more information becomes available through research and actual production levels. While the upward revisions the Corporation has made in the past are an indicator of variability, they have had a very small impact on the unit-of-production rates because they have been small compared to the large reserves base.

Impact of Oil and Gas Reserves and Prices on Testing for Impairment. Proved oil and gas properties held and used by the Corporation are reviewed for impairment whenever events or circumstances indicate that the carrying amounts may not be recoverable. Assets are grouped at the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other groups of assets.

The Corporation estimates the future undiscounted cash flows of the affected properties to judge the recoverability of carrying amounts. In general, analyses are based on proved reserves. Where probable reserves exist, an appropriately risk-adjusted amount of these reserves may be included in the impairment evaluation. An asset would be impaired if the undiscounted cash flows were less than its carrying value. Impairments are measured by the amount by which the carrying value exceeds its fair value.

The Corporation performs asset valuation analyses on an ongoing basis as a part of its asset management program. These analyses monitor the performance of assets against corporate objectives. They also assist the Corporation in assessing whether the carrying amounts of any of its assets may not be recoverable. In addition to estimating oil and gas reserve volumes in conducting these analyses, it is also necessary to estimate future oil and gas prices. Trigger events for impairment evaluation include a significant decrease in current and projected prices or reserve volumes, an accumulation of project costs significantly in excess of the amount originally expected, and historical and current operating losses.

In general, the Corporation does not view temporarily low oil prices as a trigger event for conducting the impairment tests. The markets for crude oil and natural gas have a history of significant price volatility. Although prices will occasionally drop precipitously, industry prices over the long term will continue to be driven by market supply and demand. On the supply side, industry production from mature fields is declining, but this is being offset by production from new discoveries and field developments. OPEC production policies also have an impact on world oil supplies. The demand side is largely a function of global economic growth. The relative growth/decline in supply versus demand will determine industry prices over the long term and these cannot be accurately predicted. Accordingly, any impairment tests that the Corporation performs make use of the Corporation's long-term price assumptions for the crude oil and natural gas markets, petroleum products and chemicals. These are the same price assumptions that are used in the Corporation's annual planning and budgeting processes and are also used for capital investment decisions. The corporate plan is a fundamental annual management process that is the basis for setting near-term risk-assessed operating and capital objectives in addition to providing the longer-term economic assumptions used for investment evaluation purposes. Volumes are based on individual field production profiles, which are also updated annually. Prices for natural gas and other products are based on corporate plan assumptions developed annually by major region and used for investment evaluation purposes. Cash flow estimates for impairment testing exclude the use of derivative instruments.

Supplemental information regarding oil and gas results of operations, capitalized costs and reserves can be found on pages 76 to 85. The standardized measure of discounted future cash flows on pages 84 and 85 is based on the year-end 2005 price applied for all future years, as required under Statement of Financial Accounting Standards No. 69 (FAS 69). Future prices used for any impairment tests will vary from the one used in the FAS 69 disclosure, and could be lower or higher for any given year.

The Corporation carries as an asset exploratory well costs when the well has found a sufficient quantity of reserves to justify its completion as a producing well and where the Corporation is making sufficient progress assessing the reserves and the economic and operating viability of the project. Exploratory well costs not meeting these criteria are charged to expense. Assessing whether a project has made sufficient progress is a subjective area and requires careful consideration of the relevant facts and circumstances. The facts and circumstances that support continued capitalization of suspended wells as of year-end 2005 are disclosed in note 2 to the financial statements on page 55.

Index to Financial Statements

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Consolidations

The consolidated financial statements include the accounts of those significant subsidiaries that the Corporation controls. They also include the Corporation's undivided interests in upstream assets and liabilities. Amounts representing the Corporation's percentage interest in the underlying net assets of other significant affiliates that it does not control, but exercises significant influence, are included in "Investments and advances"; the Corporation's share of the net income of these companies is included in the consolidated statement of income caption "Income from equity affiliates." The accounting for these nonconsolidated companies is referred to as the equity method of accounting.

Majority ownership is normally the indicator of control that is the basis on which subsidiaries are consolidated. However, certain factors may indicate that a majority-owned investment is not controlled and therefore should be accounted for using the equity method of accounting. These factors occur where the minority shareholders are granted by law or by contract substantive participating rights. These include the right to approve operating policies, expense budgets, financing and investment plans and management compensation and succession plans.

The Corporation consolidates certain affiliates identified as variable-interest entities in which it has less than a majority ownership, because of guarantees or other arrangements that create majority economic interests in those affiliates that are greater than the Corporation's voting interests.

Additional disclosures of summary balance sheet and income information for those subsidiaries accounted for under the equity method of accounting can be found in note 6 on page 59. The Corporation believes this to be important information necessary to a full understanding of the Corporation's financial statements.

Investments in companies that are partially owned by the Corporation are integral to the Corporation's operations. In some cases they serve to balance worldwide risks and in others they provide the only available means of entry into a particular market or area of interest. The other parties who also have an equity interest in these companies are either independent third parties or host governments that share in the business results according to their percentage ownership. The Corporation does not invest in these companies in order to remove liabilities from its balance sheet. In fact, the Corporation has long been on record supporting an alternative accounting method that would require each investor to consolidate its percentage share of all assets and liabilities in these partially owned companies rather than only its percentage in the net equity. This method of accounting for investments in partially owned companies is not permitted by GAAP except where the investments are in the direct ownership of a share of upstream assets and liabilities. However, for purposes of calculating return on average capital employed, which is not covered by GAAP standards, the Corporation includes its share of debt of these partially owned companies in the determination of average capital employed.

Annuity Benefits

The Corporation and its affiliates sponsor approximately 100 defined-benefit (pension) plans in about 50 countries. The funding arrangement for each plan depends on the prevailing practices and regulations of the countries where the Corporation operates. Note 15, pages 70 to 73, provides details on pension obligations, fund assets and pension expense.

Some of these plans (primarily non-U.S.) provide pension benefits that are paid directly by their sponsoring affiliates out of corporate cash flow rather than a separate pension fund. Book reserves are established for these plans because tax conventions and regulatory practices do not encourage advance funding. The portion of the pension cost attributable to employee service is expensed as services are rendered. The portion attributable to the increase in pension obligations due to the passage of time is expensed over the term of the obligations, which ends when all benefits are paid. The primary difference in pension expense for unfunded versus funded plans is that pension expense for funded plans also includes a credit for the expected long-term return on fund assets.

For funded plans, including many in the U.S., pension obligations are financed in advance through segregated assets or insurance arrangements. These plans are managed in compliance with the requirements of governmental authorities, and meet or exceed required funding levels as measured by relevant actuarial and government standards at the mandated measurement dates. In determining liabilities and required contributions, these standards often require approaches and assumptions that differ from those used for accounting purposes.

The Corporation will continue to make contributions to these funded plans as necessary. All defined-benefit pension obligations, regardless of the funding status of the underlying plans, are fully supported by the financial strength of the Corporation or the respective sponsoring affiliate.

Pension accounting requires explicit assumptions regarding, among others, the long-term expected earnings rate on fund assets, the discount rate for the benefit obligations, and the long-term rate for future salary increases. All the pension assumptions are reviewed annually by outside actuaries and senior management. These assumptions are adjusted only as appropriate to reflect changes in market rates and outlook. For example, the long-term expected earnings rate on U.S. pension plan assets in 2005 was 9.0 percent. This compares to an actual rate of return over the past decade of 11 percent. The Corporation establishes the long-term expected rate of return by developing a forward-looking, long-term return assumption for each pension fund asset class, taking into account factors such as the expected real return for the specific asset class and inflation. A single, long-term rate of return is then calculated as the weighted average of the target asset allocation and the long-term return assumption for each asset class. A worldwide reduction of 0.5 percent in the pension fund earnings rate would increase annual pension expense by approximately \$95 million before tax.

Index to Financial Statements

Differences between actual returns on fund assets versus the long-term expected return are not recorded in the year that the difference occurs, but rather are amortized in pension expense, along with other actuarial gains and losses, over the expected remaining service life of employees.

Litigation and Other Contingencies

A variety of claims have been made against the Corporation and certain of its consolidated subsidiaries in a number of pending lawsuits and tax disputes. These are summarized on pages 38 and 39, and are also included in note 14 on pages 68 and 69.

GAAP requires that liabilities for contingencies be recorded when it is probable that a liability has been incurred by the date of the balance sheet and that the amount can be reasonably estimated. These amounts are not reduced by amounts that may be recovered under insurance or claims against third parties, but undiscounted receivables from insurers or other third parties may be accrued separately. The Corporation revises such accruals in light of new information.

Significant management judgment is required related to contingent liabilities and the outcome of litigation because both are difficult to predict. However, the Corporation has been successful in defending litigation in the past. Payments have not had a materially adverse effect on operations or financial condition. In the Corporation's experience, large claims often do not result in large awards. Large awards are often reversed or substantially reduced as a result of appeal or settlement.

Foreign Currency Translation

The method of translating the foreign currency financial statements of the Corporation's international subsidiaries into U.S. dollars is prescribed by GAAP. Under these principles, it is necessary to select the functional currency of these subsidiaries. The functional currency is the currency of the primary economic environment in which the subsidiary operates. Management selects the functional currency after evaluating this economic environment. Downstream and Chemical operations normally use the local currency, except in highly inflationary countries, primarily Latin America, as well as in Singapore, which uses the U.S. dollar, because it predominantly sells into the U.S. dollar export market. Upstream operations also use the local currency as the functional currency, except where crude and natural gas production is predominantly sold in the export market in U.S. dollars. These operations, which use the U.S. dollar as their functional currency, include Malaysia, Indonesia, Angola, Nigeria, Equatorial Guinea, Russia and the Middle East.

Factors considered by management when determining the functional currency for a subsidiary include: the currency used for cash flows related to individual assets and liabilities; the responsiveness of sales prices to changes in exchange rates; whether sales are into local markets or exported; the currency used to acquire raw materials, labor, services and supplies; sources of financing; and significance of intercompany transactions.

Index to Financial Statements

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management, including the Corporation's chief executive officer, principal financial officer, and principal accounting officer, is responsible for establishing and maintaining adequate internal control over the Corporation's financial reporting. Management conducted an evaluation of the effectiveness of internal control over financial reporting based on the *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that Exxon Mobil Corporation's internal control over financial reporting was effective as of December 31, 2005.

Management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2005, was audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

Rex W. Tillerson Chief Executive Officer

Donald D. Humphreys Sr. Vice President and Treasurer (Principal Financial Officer) Patrick T. Mulva Vice President and Controller (Principal Accounting Officer)

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

PRICEWATERHOUSE COOPERS @

To the Shareholders of Exxon Mobil Corporation:

We have completed integrated audits of Exxon Mobil Corporation's 2005 and 2004 consolidated financial statements and of its internal control over financial reporting as of December 31, 2005, and an audit of its 2003 consolidated financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Our opinions, based on our audits, are presented below.

Consolidated financial statements

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, shareholders' equity and cash flows appearing on pages 48 to 75 present fairly, in all material respects, the financial position of Exxon Mobil Corporation and its subsidiaries at December 31, 2005, and 2004, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2005, in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in note 8 to the consolidated financial statements, the Corporation changed its method of accounting for asset retirement obligations in 2003.

Index to Financial Statements

Internal control over financial reporting

Also, in our opinion, management's assessment, included in the accompanying Management's Report on Internal Control Over Financial Reporting, that the Corporation maintained effective internal control over financial reporting as of December 31, 2005, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), is fairly stated, in all material respects, based on those criteria. Furthermore, in our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2005, based on criteria established in Internal Control - Integrated Framework issued by the COSO. The Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express opinions on management's assessment and on the effectiveness of the Corporation's internal control over financial reporting based on our audit. We conducted our audit of internal control over financial reporting in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. An audit of internal control over financial reporting includes obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we consider necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Dallas, Texas February 28, 2006

Pricewaterhouse Coopers LLP

Index to Financial Statements

CONSOLIDATED STATEMENT OF INCOME

	Note Reference		-00.0	2002
	Number	2005	2004 millions of dollar.	2003
Revenues and other income		(2	minons by ubitar.	v.
Sales and other operating revenue (1) (2)		\$358,955	\$291,252	\$237,054
Income from equity affiliates	6	7,583	4,961	4,373
Other income		4,142	1,822	5,311
Total revenues and other income		\$370,680	\$298,035	\$246,738
Costs and other deductions				
Crude oil and product purchases		\$185,219	\$139,224	\$107,658
Production and manufacturing expenses		26,819	23,225	21,260
Selling, general and administrative expenses		14,402	13,849	13,396
Depreciation and depletion		10,253	9,767	9,047
Exploration expenses, including dry holes		964	1,098	1,010
Interest expense		496	638	207
Excise taxes (1)	17	30,742	27,263	23,855
Other taxes and duties	17	41,554	40,954	37,645
Income applicable to minority and preferred interests		799	776	694
Total costs and other deductions		\$311,248	\$256,794	\$214,772
Income before income taxes		\$ 59,432	\$ 41,241	\$ 31,966
Income taxes	17	23,302	15,911	11,006
Income from continuing operations		\$ 36,130	\$ 25,330	\$ 20,960
Cumulative effect of accounting change, net of income tax				550
Net income		\$ 36,130	\$ 25,330	\$ 21,510
Net income per common share (dollars)	10			
Income from continuing operations		\$ 5.76	\$ 3.91	\$ 3.16
Cumulative effect of accounting change, net of income tax				0.08
Net income		\$ 5.76	\$ 3.91	\$ 3.24
Net income per common share – assuming dilution (dollars)	10			
Income from continuing operations		\$ 5.71	\$ 3.89	\$ 3.15
Cumulative effect of accounting change, net of income tax				0.08
Net income		\$ 5.71	\$ 3.89	\$ 3.23
			_	_

⁽¹⁾ Sales and other operating revenue includes excise taxes of \$30,742 million for 2005, \$27,263 million for 2004 and \$23,855 million for 2003.

The information on pages 52 through 75 is an integral part of these statements.

⁽²⁾ Sales and other operating revenue includes \$30,810 million for 2005, \$25,289 million for 2004 and \$20,936 million for 2003 for purchases/sales contracts with the same counterparty. Associated costs are included in crude oil and product purchases. See note 1 on page 52.

Index to Financial Statements

CONSOLIDATED BALANCE SHEET

Amari		2005	Dec. 31 2004
Appara		(millions o	f dollars)
Assets			
Current assets		6 20 671	\$ 18,531
Cash and cash equivalents	4 14	\$ 28,671	4,604
Cash and cash equivalents - restricted	3, 14	4,604 27,484	25,359
Notes and accounts receivable, less estimated doubtful amounts	5	21,484	23,339
Inventories	3	7,852	8,136
Crude oil, products and merchandise	3	1,469	1,351
Materials and supplies		3,262	2,396
Prepaid taxes and expenses			
Total current assets	-	\$ 73,342	\$ 60,377
Investments and advances	7	20,592	18,404
Property, plant and equipment, at cost, less accumulated depreciation and depletion Other assets, including intangibles, net	8	107,010 7,391	108,639 7,836
Total assets		\$208,335	\$195,256
Liabilities			
Current liabilities			
Notes and loans payable	5	\$ 1,771	\$ 3,280
Accounts payable and accrued liabilities	5		31,763
Income taxes payable		8,416	7,938
Total current liabilities		\$ 46,307	\$ 42,981
Long-term debt	12		5,013
Annuity reserves	15		10,850
Accrued liabilities		6,434	6,279
Deferred income tax liabilities	17	20,878	21,092
Deferred credits and other long-term obligations	**	3,563	3,333
Equity of minority and preferred shareholders in affiliated companies		3,527	3,952
Total liabilities		\$ 97,149	\$ 93,500
Commitments and contingencies	14		
Shareholders' equity			
Benefit plan related balances		\$ (1,266)	
Common stock without par value (9,000 million shares authorized)		5,743	5,067
Earnings reinvested		163,335	134,390
Accumulated other nonowner changes in equity			
Cumulative foreign exchange translation adjustment		979	3,598
Minimum pension liability adjustment		(2,258)	(2,499)
Unrealized gains/(losses) on stock investments		_	428
Common stock held in treasury (1,886 million shares in 2005 and 1,618 million shares			
in 2004)		(55,347)	
Total shareholders' equity		\$111,186	\$101,756
Total liabilities and shareholders' equity		\$208,335	\$195,256

The information on pages 52 through 75 is an integral part of these statements.

Index to Financial Statements

CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY

			2005	5		2004		2003	
	Note Reference Number	Sha	reholders' Equity	Nonowner Changes in Equity		areholders' Equity	Nonowner Changes in Equity	Shareholders' Equity	Nonowner Changes in Equity
Benefit plan related balances					muu	ons of dollars,			
At beginning of year		\$	(1,014)		\$	(634)		\$ (450)	
Restricted stock award			(613)			(555)		(358)	
Amortization			356			173		107	
Other			5			2		67	
At end of year		\$	(1,266)		\$	(1,014)		\$ (634)	
Common stock									
At beginning of year			5,067			4,468		4,217	
Issued						_		_	
Other			676			599		251	
At end of year		\$	5,743		\$	5,067		\$ 4,468	
Earnings reinvested		-	13:16		-				
At beginning of year			134,390			115,956		100,961	
Net income for the year			36,130	\$ 36,130		25,330	\$25,330	21,510	\$ 21,510
Dividends – common shares			(7,185)			(6,896)		(6,515)	
At end of year		\$	163,335		\$	134,390		\$ 115,956	
Accumulated other nonowner changes		4	102,220		9	151,550		<u> </u>	
in equity									
At beginning of year			1,527			(514)		(6,054)	
Foreign exchange translation			1,527			(314)		(0,054)	
adjustment			(2,619)	(2,619)		2,177	2,177	4,436	4,436
Minimum pension liability			(2,017)	(2,015)		2,177	2,177	1,150	1,100
adjustment	15		241	241		(53)	(53)	514	514
Unrealized gains/(losses) on stock	1.5		271	271		(22)	(22)	3.19	
investments				-		(83)	(83)	590	59
Reclassification adjustment for						(05)	10.50	21.0	(2.5)
gain on sale of stock									
investment included in net									
income			(428)	(428)		_	-	_	-
At end of year		\$	(1,279)	Acres	\$	1,527		\$ (514)	
Total		-	(1,2/)	\$ 33,324		1,027	\$27,371	<u> </u>	\$ 27,05
				\$ 33,324			921,311		₩ 27,00°
Common stock held in treasury			/00 at 15			(20.251)		(04.077)	
At beginning of year			(38,214)			(29,361)		(24,077)	
Acquisitions, at cost			(18,221)			(9,951)		(5,881)	
Dispositions		_	1,088		-	1,098		597	
At end of year		\$	(55,347)		\$	(38,214)		\$ (29,361)	
Shareholders' equity at end of year		\$	111,186		\$	101,756		\$ 89,915	
					-	To realize			
		-	2005		Sh	are Activity 2004	_	2003	
					milli	ons of shares)			
Common stock									
Issued								0.402	
At beginning of year			8,019			8,019		8,019	
Issued									
At end of year			8,019			8,019		8,019	
Held in treasury									

At beginning of year	(1,618)	(1,451)	(1,319)
Acquisitions	(311)	(218)	(163)
Dispositions	43	51	31
At end of year	(1,886)	(1,618)	(1,451)
Common shares outstanding at end of			-
year	6,133	6,401	6,568

The information on pages 52 through 75 is an integral part of these statements.

Index to Financial Statements

CONSOLIDATED STATEMENT OF CASH FLOWS

	Note Reference Number	2005	2004	2003
			sillions of dollars,	
Cash flows from operating activities				
Net income		2.51.620-		4.67.646
Accruing to ExxonMobil shareholders		\$ 36,130	\$ 25,330	\$ 21,510
Accruing to minority and preferred interests		799	776	694
Cumulative effect of accounting change, net of income tax		-	_	(550)
Adjustments for noncash transactions		10.252	0.767	0.047
Depreciation and depletion		10,253	9,767	9,047
Deferred income tax charges/(credits)		(429)	(1,134)	1,827
Annuity provisions		254	886	(1,489)
Accrued liability provisions		398	806	264
Dividends received greater than/(less than) equity in current earnings		(72.4)	/1 6425	(402)
of equity companies		(734)	(1,643)	(402)
Changes in operational working capital, excluding cash and debt		(2.700)	(472)	(1,286)
Reduction/(increase) - Notes and accounts receivable		(3,700)	(223)	(1,280)
- Inventories		(434)	11	42
- Prepaid taxes and expenses		(7) 7,806	6,333	1,130
Increase/(reduction) – Accounts and other payables	4	(1,980)	(268)	(2,461)
Net (gain) on asset sales and Ruhrgas transaction All other items – net	4	(218)	382	272
Net cash provided by operating activities		\$ 48,138	\$ 40,551	\$ 28,498
Cash flows from investing activities		#/12 B205	0(11 007)	0(10.050)
Additions to property, plant and equipment	4	\$(13,839)	\$(11,986)	\$(12,859)
Sales of subsidiaries, investments and property, plant and equipment	4	6,036	2,754	2,290
Increase in restricted cash and cash equivalents	3, 14	/2 910)	(4,604)	(809)
Additional investments and advances		(2,810)	(2,287)	536
Collection of advances		343	1,213	_
Net cash used in investing activities		\$(10,270)	\$(14,910)	\$(10,842)
Cash flows from financing activities			0 400	6 107
Additions to long-term debt		\$ 195	\$ 470	\$ 127
Reductions in long-term debt		(81)	(562)	(914)
Additions to short-term debt		377	450	715 (1,730)
Reductions in short-term debt		(687)	(2,243)	(322)
Additions/(reductions) in debt with less than 90-day maturity		(1,306)	(66)	(6,515)
Cash dividends to ExxonMobil shareholders		(7,185)	(6,896)	(430)
Cash dividends to minority interests		(293)	(215)	(247)
Changes in minority interests and sales/(purchases) of affiliate stock		(681)	(215)	(5,881)
Common stock acquired		(18,221)	(9,951) 960	434
Common stock sold		941		
Net cash used in financing activities		\$(26,941)	\$(18,268)	\$(14,763)
Effects of exchange rate changes on cash		\$ (787)	\$ 532	\$ 504
Increase/(decrease) in cash and cash equivalents		\$ 10,140	\$ 7,905	\$ 3,397
Cash and cash equivalents at beginning of year		18,531	10,626	7,229
Cash and cash equivalents at end of year		\$ 28,671	\$ 18,531	\$ 10,626

The information on pages 52 through 75 is an integral part of these statements.

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The accompanying consolidated financial statements and the supporting and supplemental material are the responsibility of the management of Exxon Mobil Corporation.

The Corporation's principal business is energy, involving the worldwide exploration, production, transportation and sale of crude oil and natural gas (Upstream) and the manufacture, transportation and sale of petroleum products (Downstream). The Corporation is also a major worldwide manufacturer and marketer of petrochemicals (Chemical), and participates in electric power generation (Upstream).

The preparation of financial statements in conformity with U.S. Generally Accepted Accounting Principles (GAAP) requires management to make estimates that affect the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities. Actual results could differ from these estimates. Certain reclassifications to prior years have been made to conform to the 2005 presentation.

1. Summary of Accounting Policies

Principles of Consolidation. The consolidated financial statements include the accounts of those significant subsidiaries owned directly or indirectly with more than 50 percent of the voting rights held by the Corporation, and for which other shareholders do not possess the right to participate in significant management decisions. They also include the Corporation's share of the undivided interest in upstream assets and liabilities. Additionally, the Corporation consolidates certain affiliates identified as variable-interest entities in which it has less than a majority ownership, because of guarantees or other arrangements that create majority economic interests in those affiliates that are greater than the Corporation's voting interests.

Amounts representing the Corporation's percentage interest in the underlying net assets of other significant subsidiaries and less-than-majority-owned companies in which a significant ownership percentage interest is held are included in "Investments and advances"; the Corporation's share of the net income of these companies is included in the consolidated statement of income caption "Income from equity affiliates." The Corporation's share of the cumulative foreign exchange translation adjustment for equity method investments is reported in consolidated shareholder's equity. Evidence of loss in value that might indicate impairment of investments in companies accounted for on the equity method is assessed to determine if such evidence represents a loss in value of the Corporation's investment that is other than temporary. Examples of key indicators include a history of operating losses, a negative earnings and cash flow outlook, significant downward revisions to oil and gas reserves, and the financial condition and prospects for the investee's business segment or geographic region. If evidence of an other than temporary loss in fair value below carrying amount is determined, an impairment is recognized. In the absence of market prices for the investment, discounted cash flows are used to assess fair value.

Revenue Recognition. The Corporation generally sells crude oil, natural gas and petroleum and chemical products under short-term agreements at prevailing market prices. In some cases (e.g., natural gas), products may be sold under long-term agreements, with periodic price adjustments. In all cases, revenues are recognized when the products are delivered, which occurs when the customer has taken title and has assumed the risks and rewards of ownership, prices are fixed or determinable and collectibility is reasonably assured.

Revenues from the production of natural gas properties in which the Corporation has an interest with other producers are recognized on the basis of the Corporation's net working interest. Differences between actual production and net working interest volumes are not significant.

At its September 2005 meeting, the Emerging Issues Task Force (EITF) reached a consensus on Issue No. 04-13, "Accounting for Purchases and Sales of Inventory with the Same Counterparty." This issue addresses the question of when it is appropriate to measure purchases and sales of inventory at fair value and record them in cost of sales and revenues and when they should be recorded as exchanges measured at the book value of the item sold. The EITF concluded that purchases and sales of inventory with the same counterparty that are entered into in contemplation of one another should be combined and recorded as exchanges measured at the book value of the item sold.

The Corporation records in revenues certain crude oil, natural gas, petroleum product and chemical sales where the Corporation contemporaneously negotiated purchases with the same counterparty. The purchases are recorded in crude oil and product purchases. These transactions are commonly called "buy/sell transactions" and are used to ensure that the right

crude oil is available to the Corporation's refineries at the right time and that appropriate products are available to meet customer demand. The Corporation's accounting treatment for these buy/sell transactions is consistent with long standing industry practice. The EITF consensus will result in the Corporation's accounts "Sales and other operating revenue" and "Crude oil and product purchases" on the Consolidated Statement of Income being reduced by associated amounts with no impact on net income. All operating segments will be affected by this change, but the largest impacts are in the Downstream. The EITF consensus will become effective, beginning no later than the second quarter of 2006.

The purchase/sale amounts included in revenue for 2005, 2004 and 2003 are shown below along with total "Sales and other operating revenue" to provide context.

	2005	2004	2003
Sales and other operating revenue Amounts included in sales and other operating revenue for purchases/sales	\$358,955	(millions of dollars) \$291,252	\$237,054
contracts with the same counterparty (1)	30,810	25,289	20,936
Percent of sales and other operating revenue	99	6 9%	9%

⁽¹⁾ Associated costs are in "Crude oil and product purchases"

Index to Financial Statements

Derivative Instruments. The Corporation makes limited use of derivative instruments. The Corporation does not engage in speculative derivative activities or derivative trading activities nor does it use derivatives with leveraged features. When the Corporation does enter into derivative transactions, it is to offset exposures associated with interest rates, foreign currency exchange rates and hydrocarbon prices that arise from existing assets, liabilities and transactions.

The gains and losses resulting from changes in the fair value of derivatives are recorded in income. In some cases, the Corporation designates derivatives as fair value hedges, in which case the gains and losses are offset in income by the gains and losses arising from changes in the fair value of the underlying hedged items.

The Corporation has certain long-term sales and purchase contracts entered into in the normal course of business that are deemed to be derivative instruments. Gains and losses arising from these contracts are calculated by the difference between the contract prices and market prices and are recognized in income.

Inventories, Crude oil, products and merchandise inventories are carried at the lower of current market value or cost (generally determined under the last-in, first-out method — LIFO). Inventory costs include expenditures and other charges (including depreciation) directly and indirectly incurred in bringing the inventory to its existing condition and location. Selling expenses and general and administrative expenses are reported as period costs and excluded from inventory cost. Inventories of materials and supplies are valued at cost or less.

Property, Plant and Equipment. Depreciation, depletion and amortization, based on cost less estimated salvage value of the asset, are primarily determined under either the unit-of-production method or the straight-line method, which is based on estimated asset service life taking obsolescence into consideration. Maintenance and repairs, including planned major maintenance, are expensed as incurred. Major renewals and improvements are capitalized and the assets replaced are retired.

The Corporation uses the "successful efforts" method to account for its exploration and production activities. Under this method, costs are accumulated on a field-by-field basis with certain exploratory expenditures and exploratory dry holes being expensed as incurred. Costs of productive wells and development dry holes are capitalized and amortized on the unit-of-production method for each field.

The Corporation carries as an asset exploratory well costs when the well has found a sufficient quantity of reserves to justify its completion as a producing well and where the Corporation is making sufficient progress assessing the reserves and the economic and operating viability of the project. Exploratory well costs not meeting these criteria are charged to expense.

Acquisition costs of proved properties are amortized using a unit-of-production method, computed on the basis of total proved oil and gas reserves. Significant unproved properties are assessed for impairment individually and valuation allowances against the capitalized costs are recorded based on the estimated economic chance of success and the length of time that the Corporation expects to hold the properties. The cost of properties that are not individually significant are aggregated by groups and amortized over the average holding period of the properties of the groups. The valuation allowances are reviewed at least annually. Other exploratory expenditures, including geophysical costs, other dry hole costs and annual lease rentals, are expensed as incurred.

Unit-of-production depreciation is applied to property, plant and equipment, including capitalized exploratory drilling and development costs, associated with productive depletable extractive properties, all in the Upstream segment. Unit-of-production rates are based on the amount of proved developed reserves of oil, gas and other minerals that are estimated to be recoverable from existing facilities using current operating methods. Additional oil and gas to be obtained through the application of improved recovery techniques is included when, or to the extent that, the requisite commercial-scale facilities have been installed and the required wells have been drilled.

Under the unit-of-production method, oil and gas volumes are considered produced once they have been measured through meters at custody transfer or sales transaction points at the outlet valve on the lease or field storage tank.

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Production costs are expensed as incurred. Production involves lifting the oil and gas to the surface and gathering, treating, field processing and field storage of the oil and gas. The production function normally terminates at the outlet valve on the lease or field production storage tank. Production costs are those incurred to operate and maintain the Corporation's wells and related equipment and facilities. They become part of the cost of oil and gas produced. These costs, sometimes referred to as lifting costs, include such items as labor costs to operate the wells and related equipment; repair and maintenance costs on the wells and equipment; materials, supplies and energy costs required to operate the wells and related equipment; and administrative expenses related to the production activity.

Gains on sales of proved and unproved properties are only recognized when there is no uncertainty about the recovery of costs applicable to any interest retained or where there is no substantial obligation for future performance by the Corporation. Losses on properties sold are recognized when incurred or when the properties are held for sale and the fair value of the properties is less than the carrying value.

Proved oil and gas properties held and used by the Corporation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amounts may not be recoverable. Assets are grouped at the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other groups of assets.

The Corporation estimates the future undiscounted cash flows of the affected properties to judge the recoverability of carrying amounts. Cash flows used in impairment evaluations are developed using annually updated corporate plan investment evaluation assumptions for crude oil commodity prices and foreign currency exchange rates. Annual volumes are based on individual field production profiles, which are also updated annually. Prices for natural gas and other products are based on corporate plan assumptions developed annually by major region and also for investment evaluation purposes. Cash flow estimates for impairment testing exclude derivative instruments.

Impairment analyses are generally based on proved reserves. Where probable reserves exist, an appropriately riskadjusted amount of these reserves may be included in the impairment evaluation. Impairments are measured by the amount the carrying value exceeds the fair value.

Asset Retirement Obligations and Environmental Costs. The Corporation incurs retirement obligations for its upstream assets. The fair values of these obligations are recorded as liabilities on a discounted basis, which is typically at the time the assets are installed. The costs associated with these liabilities are capitalized as part of the related assets and depreciated as the reserves are produced. Over time, the liabilities are accreted for the change in present value. Asset retirement obligations are not recorded for downstream and chemical facilities, because such potential obligations cannot be measured since it is not possible to estimate the settlement dates.

Liabilities for environmental costs are recorded when it is probable that obligations have been incurred and the amounts can be reasonably estimated. These liabilities are not reduced by possible recoveries from third parties, and projected cash expenditures are not discounted.

Foreign Currency Translation. The "functional currency" for translating the accounts of the majority of downstream and chemical operations outside the U.S. is the local currency. Local currency is also used for upstream operations that are relatively self-contained and integrated within a particular country, such as in Canada, the United Kingdom, Norway and continental Europe. The U.S. dollar is used for operations in highly inflationary economies, in Singapore, which is predominantly export-oriented, and for some upstream operations, primarily in Malaysia, Indonesia, Angola, Nigeria, Equatorial Guinea, Russia and the Middle East. For all operations, gains or losses on remeasuring foreign currency transactions into functional currency are included in income.

Share-Based Payments. Effective January 1, 2003, the Corporation adopted for all employee share-based awards granted after that date, the recognition provisions of Statement of Financial Accounting Standards No. 123 (FAS 123), "Accounting for Share-Based Compensation." In accordance with FAS 123, compensation expense for awards granted on or after January 1, 2003, have been measured by the fair value of the award at the date of grant and recognized over the requisite service period. The fair value of awards in the form of restricted stock is the market price of the stock. The fair value of awards in the form of stock options is estimated using an option-pricing model.

The Corporation has retained its prior method of accounting for share-based awards granted before January 1, 2003.

Under this method, compensation expense for awards granted in the form of stock options is measured at the intrinsic value of the options (the difference between the market price of stock and the exercise price of the options) on the date of grant. Since these two prices are the same on the date of grant, no compensation expense has been recognized in income for these awards. In 2002, the Corporation began issuing restricted stock as share-based compensation in lieu of stock options. Compensation expense for these awards is based on the price of stock when it is granted and is recognized in income over the requisite service period, which is the same method of accounting as under FAS 123. The net income per share for 2003 through 2005 would be unchanged if the provisions of FAS 123 had been adopted for all prior years.

In December 2004, the Financial Accounting Standards Board (FASB) issued a revised Statement of Financial Accounting Standards No. 123 (FAS 123R), "Share-based Payment", which will become effective for the Corporation as of January 1, 2006. Adoption of FAS 123R will not materially change the Corporation's existing accounting practices or the amount of share-based compensation recognized in earnings.

Index to Financial Statements

2. Accounting for Suspended Exploratory Well Costs

Effective July 1, 2005, the Corporation adopted Financial Accounting Standards Board Staff Position FAS 19-1 (FSP 19-1), "Accounting for Suspended Well Costs." FSP 19-1 amended Statement of Financial Accounting Standards No. 19 (FAS 19), "Financial Accounting and Reporting by Oil and Gas Producing Companies," to permit the continued capitalization of exploratory well costs beyond one year if (a) the well found a sufficient quantity of reserves to justify its completion as a producing well and (b) the entity is making sufficient progress assessing the reserves and the economic and operating viability of the project. There were no capitalized exploratory well costs charged to expense upon the adoption of FSP 19-1.

Prior to the adoption of FSP 19-1, the Corporation carried as an asset the cost of drilling exploratory wells that found sufficient quantities of reserves to justify their completion as producing wells if the required capital expenditure was made and drilling of additional exploratory wells was under way or firmly planned for the near future. Once exploration activities demonstrated that sufficient quantities of commercially producible reserves had been discovered, continued capitalization was dependent on project reviews, which took place at least annually, to ensure that satisfactory progress toward ultimate development of the reserves was being achieved. Exploratory well costs not meeting these criteria were charged to expense.

The following two tables provide details of the changes in the balance of suspended exploratory well costs as well as an aging summary of those costs.

Change in capitalized suspended exploratory well costs:

	2005	2004	2003
	(mil	lions of dolla	irs)
Balance beginning at January 1	\$1,070	\$1,093	\$1,193
Additions pending the determination of proved reserves	233	139	217
Charged to expense	(62)	(98)	(238)
Reclassifications to wells, facilities and equipment based on the determination of proved			
reserves	(82)	(92)	(123)
Foreign exchange/other	(20)	28	44
Ending balance	\$1,139	\$1,070	\$1,093
Ending balance attributed to equity companies included above	\$ 2	\$ 1	\$ 30

Period end capitalized suspended exploratory well costs:

	2005	2004	2003
	(mili	ions of dolla	urs)
Capitalized for a period of one year or less	\$ 233	\$ 139	\$ 217
Capitalized for a period of between one and five years	485	510	453
Capitalized for a period of between five and ten years	167	172	162
Capitalized for a period of greater than ten years	254	249	261
Capitalized for a period greater than one year - subtotal	\$ 906	\$ 931	\$ 876
Total	\$1,139	\$1,070	\$1,093

Exploration activity often involves drilling multiple wells, over a number of years, to fully evaluate a project. The table below provides a numerical breakdown of the number of projects with suspended exploratory well costs which had their first capitalized well drilled in the preceding 12 months and those that have had exploratory well costs capitalized for a period greater than 12 months.

	2005	2004	2003
Number of projects with first capitalized well drilled in the preceding 12 months	16	8	13
Number of projects that have exploratory well costs capitalized for a period of greater than 12 months	56	61	76
Total	72	69	89

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Of the 56 projects that have exploratory well costs capitalized for a period greater than twelve months as of December 31, 2005, 18 projects have drilling in the preceding twelve months or exploratory activity planned in the next two years, while the remaining 38 projects are those with completed exploratory activity progressing toward development. The table below provides additional detail for those 38 projects which total \$561 million.

Country/Project	Dec. 31, 2005	Years Wells Drilled	Comment
	nillions of dollar	s)	
Angola			
– Marimba	\$ 11	2001	Development in progress on first phase of Marimba deepwater project with proved reserves booked; development of second phase awaiting capacity in existing/planned infrastructure.
– Mavacola	12	2001 - 2002	Development awaiting capacity in existing/planned infrastructure; planned subsea tieback to floating production system; submission of Declaration of Commerciality in 2005
- Orquidea/Violeta	6	1999 - 2001	Planned subsea tieback to floating production system; high- resolution 3-D seismic survey in 2004; further technical evaluation and reservoir studies were conducted in 2005.
Australia			
- Gorgon/Jansz	69	1980 - 2003	Gorgon and Jansz resources to be developed as integrated LNG project; Barrow Island land access rights for onshore plant secured in 2003; co-venturers combined their resources and redistributed their equity interests in 2005 with governmental approval; initial project funding and engineering began in 2005.
- Kipper/East Pilchard	10	1986 - 2001	Bass Strait project in design phase; planned tie-in to existing platform; initial Kipper funding began in 2005 following execution of Memorandum of Understanding between coventurers; development of East Pilchard phase awaiting capacity in existing/planned infrastructure.
– Whiptail	3	2004	Progressing development concept with planned subsea tieback to existing Bass Strait platform.
Canada			
- Hebron	32	1999 - 2000	Progressing development concept with co-venturer following resolution of the Joint Operating Agreement in 2005; recent efforts focused on further technical evaluation of wells and reservoir using seismic reprocessing and well core analysis; initial project funding and engineering began in 2005.
Indonesia			
– Сери	41	1998 - 2001	Memorandum of Understanding and a Production Sharing Contract were signed in 2005 that extend the license term for 30 years; other agreements are progressing with the Government of Indonesia; initial project funding and engineering began in 2001, with development anticipated upon conclusion of negotiations.
– Natuna	118	1981 - 1983	Intent to proceed to the next phase of development communicated to government in 2004; discussions with government on near-term development work plans are in progress; further technical evaluation and gas marketing activities were progressed in 2005, including discussions

Index to Financial Statements

Country/Project	Dec. 31, 2005	Years Wells Drilled	Comment
	nillions of dollars	5)	
Nigeria			
- Etoro-Isobo	9	2002	Offshore satellite development which will tie back to an existing production facility.
- Other (5 projects)	15	2001 - 2002	Actively pursuing development of several additional offshore satellite discoveries which will tie back to existing production facilities.
Norway			At 1 to 1
- Lavrans	20	1995 - 1999	Development awaiting capacity in existing/planned infrastructure; planned subsea tieback to existing floating production system; evaluation of phased ullage filling scenarios is progressing.
– Skary/Idun	27	1998 - 2002	Planned subsea tieback to floating production system; the export infrastructure and development plan was agreed to with partners in 2005; submission of Plan of Development to the government anticipated in 2006; initial project funding and engineering began in 2005.
- Other (4 projects)	6	1992 - 2002	Progressing several smaller North Sea developments.
Papua New Guinea			
Hides	35	1993 - 1998	Early engineering studies complete; negotiations with customers on sales terms are in progress; initial project funding and engineering began in 2004; reservoir pressure data acquired in 2005 for ongoing technical evaluation.
Russia			A COLUMN TO THE REAL PROPERTY OF THE PARTY O
- Sakhalin 1, Phase 3	26	1996 - 1998	Actively progressing third phase of the Sakhalin-1 project to utilize capacity in facilities and infrastructure in Phase 1; Phase 1 development underway with first production in 2005 and additional development drilling in 2006; progressing Phase 3 development concept with co-venturers and government; plan to conduct further technical evaluation and reservoir studies in 2006.
United Kingdom			
– Phyllis	9	2004	Assessing co-development option with nearby 2005 Barbara discovery.
– Puffin	37	1981 - 1986	
- Starling	8	2003	Planned subsea tieback to existing U.K. North Sea facilities; project funding anticipated in 2006.
- Other (2 projects)	3	2002 - 2003	Progressing smaller North Sea developments.
United States			
- Point Thomson	28	1977 - 1980	Progressing development option consisting of tie-in to proposed Alaska gas pipeline; negotiations of gas pipeline fiscal terms with state of Alaska ongoing; conceptual engineering planned for 2006.
Other			
- Various (9 projects)	36	1979 - 2004	Projects primarily awaiting capacity in existing or planned infrastructure.
Total (38 projects)	\$561	1	

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Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

3. Miscellaneous Financial Information

Research and development costs totaled \$712 million in 2005, \$649 million in 2004 and \$618 million in 2003.

Net income included aggregate foreign exchange transaction losses of \$138 million in 2005 and gains of \$69 million in 2004 and \$11 million in 2003.

In 2005, 2004 and 2003, net income included gains of \$215 million, \$227 million and \$255 million, respectively, attributable to the combined effects of LIFO inventory accumulations and draw-downs. The aggregate replacement cost of inventories was estimated to exceed their LIFO carrying values by \$15.4 billion and \$9.8 billion at December 31, 2005, and 2004, respectively.

Crude oil, products and merchandise as of year-end 2005 and 2004 consist of the following:

	2005	2004
	(billion	s of dollars)
Petroleum products	\$ 3.2	\$ 3.4
Crude oil	2.2	2.3
Chemical products	2.1	2.1
Gas/other	0.3	0.3
Total	\$ 7.8	\$ 8.1

Restricted cash and cash equivalents were \$4,604 million at December 31, 2005, attributable to cash and short-term, high-quality securities the Corporation pledged as collateral to the issuer of a \$4.5 billion litigation-related bond. The Corporation posted this bond to stay execution of the judgment pending appeal in the case of Exxon Corporation v. State of Alabama, et al. (refer to page 38 and note 14 on page 68 for discussion of this lawsuit). Under the terms of the pledge agreement, the Corporation is entitled to receive the income generated from the cash and securities and to make investment decisions, but is restricted from using the pledged cash and securities for any other purpose until such time the bond is canceled.

4. Cash Flow Information

The consolidated statement of cash flows provides information about changes in cash and cash equivalents. Highly liquid investments with maturities of three months or less when acquired are classified as cash equivalents.

In cash from operating activities on the Consolidated Statement of Cash Flows, the "Net (gain) on asset sales and Ruhrgas transaction" in 2005 includes the before tax gain from the Corporation's sale of its investment in Sinopec and other assets, primarily Upstream producing properties. The gain is reported in "Other income" on the Consolidated Statement of Income.

In 2003, ExxonMobil completed a divestment of interests in shares of Ruhrgas AG, a German gas transmission company. These shares were held in part by BEB Erdgas und Erdoel GmbH (BEB), an investment accounted for by the equity method, and in part by a consolidated affiliate in Germany. Upon receipt of regulatory approvals in 2003, a gain of \$1,700 million after tax was recognized in net income. An elimination of the pre-tax gain of \$2,240 million is included in 2003 cash flow from operating activities. Cash generated of \$1,466 million from these gains for the BEB portion of the transaction was reported in 2002. For the shares held by the consolidated affiliate, the cash received was reported in cash flows from investing activities in 2003.

During 2005, Mobil Services (Bahamas) Ltd. issued variable notes due in 2035 to a consolidated ExxonMobil affiliate. This affiliate was later deconsolidated and the notes were classified as long-term debt. Therefore, this loan did not result in an "Additions to long-term debt" in the Consolidated Statement of Cash Flows.

Cash payments for interest were: 2005 – \$473 million, 2004 – \$328 million, and 2003 – \$429 million. Cash payments for income taxes were: 2005 – \$22,535 million, 2004 – \$13,510 million, and 2003 – \$ 8,149 million.

5. Additional Working Capital Information

	Dec. 31 2005 (millions of	Dec. 31 2004 of dollars)
Notes and accounts receivable		000 010
Trade, less reserves of \$321 million and \$332 million	\$23,858	\$20,712
Other, less reserves of \$44 million and \$40 million	3,626	4,647
Total	\$27,484	\$25,359
Notes and loans payable		
Bank loans	\$ 790	\$ 839
Commercial paper	291	1,491
Long-term debt due within one year	515	608
Other	175	342
Total	\$ 1,771	\$ 3,280
Accounts payable and accrued liabilities	-	1000
Trade payables	\$22,788	\$18,186
Payables to equity companies	2,451	1,871
Accrued taxes other than income taxes	5,607	6,055
Other	5,274	5,651
Total	\$36,120	\$31,763

On December 31, 2005, unused credit lines for short-term financing totaled approximately \$5.4 billion. Of this total, \$3.3 billion support commercial paper programs under terms negotiated when drawn. The weighted-average interest rate on short-term borrowings outstanding at December 31, 2005, and 2004, was 4.9 percent and 3.5 percent, respectively.

Index to Financial Statements

6. Equity Company Information

The summarized financial information below includes amounts related to certain less-than-majority-owned companies and majority-owned subsidiaries where minority shareholders possess the right to participate in significant management decisions (see note 1 on page 52). These companies are primarily engaged in crude production, natural gas marketing and refining operations in North America; natural gas production, natural gas distribution and downstream operations in Europe; crude production in Kazakhstan and Abu Dhabi; and liquefied natural gas (LNG) operations in Qatar. Also included are several power generation, petrochemical/lubes manufacturing and chemical ventures. The Corporation's ownership in these ventures is in the form of shares in corporate joint ventures as well as interests in partnerships. The share of total revenues in the table below representing sales to ExxonMobil consolidated companies was 22 percent, 22 percent and 18 percent in the years 2005, 2004 and 2003, respectively.

	2	005		2	004		2	003	
Equity Company Financial Summary	Total	Ex	xonMobil Share	Total		xonMobil Share	Total	2.70	xonMobil Share
Total revenues	\$88,003	\$	31,395	(millions \$72,872	s of a	26,359	\$63,651	\$	23,667
Income before income taxes	\$24,070	\$	9,809	\$15,278	\$	6,141	\$11,432	\$	5,356
Income taxes	5,574		2,226	3,257		1,180	1,871		983
Income from continuing operations	\$18,496	\$	7,583	\$12,021	\$	4,961	\$ 9,561	\$	4,373
Cumulative effect of accounting change, net of income tax						-	74		35
Net income	\$18,496	\$	7,583	\$12,021	\$	4,961	\$ 9,635	\$	4,408
Current assets	\$24,931	\$	8,645	\$21,835	S	7,803	\$19,334	\$	7,386
Property, plant and equipment, less accumulated	1 ch 1 ch		22.24.67	21341	ň	450	24 246	n	CONT.
depreciation	50,622		17,149	46,236		15,793	40,895		15,034
Other long-term assets	6,900		3,919	6,600		4,166	5,820		2,694
Total assets	\$82,453	\$	29,713	\$74,671	\$	27,762	\$66,049	\$	25,114
Short-term debt	\$ 3,412	\$	1,179	\$ 4,109	\$	1,348	\$ 3,402	\$	1,336
Other current liabilities	15,330		5,414	14,463		5,397	13,394		5,112
Long-term debt	13,419		2,271	10,477		2,566	7,997		2,815
Other long-term liabilities	7,477		3,153	6,489		2,910	6,738		3,215
Advances from shareholders	14,390		5,580	12,339		3,799	11,092	Œ	3,091
Net assets	\$28,425	\$	12,116	\$26,794	\$	11,742	\$23,426	\$	9,545

A list of significant equity companies as of December 31, 2005, together with the Corporation's percentage ownership interest, is detailed below:

Upstream Aera Energy LLC BEB Erdgas und Erdoel GmbH 50
Aera Energy LLC 48
Cameroon Oil Transportation Company S.A. 41
Castle Peak Power Company Limited 60
Nederlandse Aardolie Maatschappij B.V. 50
Qatar Liquefied Gas Company Limited 10
Ras Laffan Liquefied Natural Gas Company Limited 25
Ras Laffan Liquefied Natural Gas Company Limited II 30
Tengizchevroil, LLP
Downstream
Chalmette Refining, LLC 50
Mineraloelraffinerie Oberrhein GmbH & Co. KG
Saudi Aramco Mobil Refinery Company Ltd. 50

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50
50
50
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Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

7. Investments and Advances

	Dec. 31 2005	Dec. 31 2004
	(millions	of dollars)
Companies carried at equity in underlying assets		
Investments	\$12,116	\$11,742
Advances	5,580	3,799
	\$17,696	\$15,541
Companies carried at cost or less and stock investments carried at fair value	1,732	1,931
	\$19,428	\$17,472
Long-term receivables and miscellaneous investments at cost or less	1,164	932
Total	\$20,592	\$18,404

8. Property, Plant and Equipment and Asset Retirement Obligations

	Dec. 3	Dec. 31, 2005		
Property, Plant and Equipment	Cost	Net	Cost	Net
		(millions	of dollars)	14 17/01/04
Upstream	\$148,844	\$ 62,817	\$148,024	\$ 62,013
Downstream	59,338	28,029	62,014	29,810
Chemical	21,055	9,304	21,777	10,049
Other	11,057	6,860	10,607	6,767
Total	\$240,294	\$107,010	\$242,422	\$108,639

In the Upstream segment, depreciation is on a unit-of-production basis, so depreciable life will vary by field. In the Downstream segment, investments in refinery and lubes basestock manufacturing facilities are generally depreciated on a straight-line basis over a 25-year life and service station buildings and fixed improvements over a 20-year life. In the Chemical segment, investments in process equipment are generally depreciated on a straight-line basis over a 20-year life.

Accumulated depreciation and depletion totaled \$133,284 million at the end of 2005 and \$133,783 million at the end of 2004. Interest capitalized in 2005, 2004 and 2003 was \$434 million, \$500 million and \$490 million, respectively.

Asset Retirement Obligations (AROs)

As of January 1, 2003, the Corporation adopted Financial Accounting Standards Board Statement of Financial Accounting Standards No. 143 (FAS 143), "Accounting for Asset Retirement Obligations." Under FAS 143, the fair values of asset retirement obligations are recorded as liabilities on a discounted basis when they are incurred, which is typically at the time the assets are installed. Amounts recorded for the related assets will be increased by the amount of these obligations. Over time, the liabilities will be accreted for the change in their present value and the initial capitalized costs will be depreciated over the useful lives of the related assets. Asset retirement obligations are not recorded for downstream and chemical facilities because such potential obligations cannot be measured since it is not possible to estimate the settlement dates.

The cumulative adjustment for the change in accounting principle reported in 2003 was after-tax income of \$550 million.

The following table summarizes the activity in the liability for asset retirement obligations:

		2004
Beginning balance	(millions of \$3.610	\$3,440
Accretion expense and other provisions	208	136
Payments made	(193)	(201)
Liabilities incurred	165	143
The state of the s		

Foreign currency	translation/other
Ending balance	

(222)	92
\$3,568	\$3,610

Index to Financial Statements

9. Leased Facilities

At December 31, 2005, the Corporation and its consolidated subsidiaries held noncancelable operating charters and leases covering drilling equipment, tankers, service stations and other properties with minimum lease commitments as indicated in the table.

Net rental expenditures for 2005, 2004 and 2003 totaled \$2,790 million, \$2,491 million and \$2,298 million, respectively, after being reduced by related rental income of \$176 million, \$136 million and \$141 million, respectively. Minimum rental expenditures totaled \$2,847 million in 2005, \$2,501 million in 2004 and \$2,319 million in 2003.

	imum nitment		ated Income
	 (millions	of dollars)	
2006	\$ 1,505	\$	48
2007	1,406		43
2008	1,089		38
2009	761		33
2010	639		30
2011 and beyond	1,560		45
Total	\$ 6,960	\$	237

10. Earnings Per Share

	2005	2004	2003
Net income per common share Income from continuing operations (millions of dollars)	\$36,130	\$25,330	\$20,960
Weighted average number of common shares outstanding (millions of shares)	6,266	6,482	6,634
Net income per common share (dollars) Income from continuing operations Cumulative effect of accounting change, net of income tax Net income	\$ 5.76 \$ 5.76	\$ 3.91 <u>—</u> \$ 3.91	\$ 3.16 0.08 \$ 3.24
Net income per common share – assuming dilution Income from continuing operations (millions of dollars)	\$36,130	\$25,330	\$20,960
Weighted average number of common shares outstanding (millions of shares) Effect of employee stock-based awards	6,266 56	6,482 37	6,634 28
Weighted average number of common shares outstanding - assuming dilution	6,322	6,519	6,662
Net income per common share (dollars) Income from continuing operations Cumulative effect of accounting change, net of income tax Net income	\$ 5.71 \$ 5.71	\$ 3.89 <u>\$ 3.89</u>	\$ 3.15 0.08 \$ 3.23
Dividends paid per common share (dollars)	\$ 1.14	\$ 1.06	\$ 0.98

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

11. Financial Instruments and Derivatives

The fair value of financial instruments is determined by reference to various market data and other valuation techniques as appropriate. Long-term debt is the only category of financial instruments whose fair value differs materially from the recorded book value. The estimated fair value of total long-term debt, including capitalized lease obligations, at December 31, 2005, and 2004, was \$7.0 billion and \$5.9 billion, respectively, as compared to recorded book values of \$6.2 billion and \$5.0 billion.

The Corporation's size, strong capital structure, geographic diversity and the complementary nature of the Upstream, Downstream and Chemical businesses reduce the Corporation's enterprise wide risk from changes in interest rates, currency rates and commodity prices. As a result, the Corporation makes limited use of derivatives to mitigate the impact of such changes. The Corporation does not engage in speculative derivative activities or derivative trading activities nor does it use derivatives with leveraged features. The Corporation maintains a system of controls that includes the authorization, reporting and monitoring of derivative activity. The Corporation's limited derivative activities pose no material credit or market risks to ExxonMobil's operations, financial condition or liquidity.

The estimated fair values of derivatives outstanding and recorded on the balance sheet are shown in the table below. This is the amount that the Corporation would have paid to, or received from, third parties if these derivatives had been settled in the open market. The majority of the 2005 amount resulted from long-term U.K. gas sales and purchase contracts entered into in the normal course of business that are deemed to be derivative instruments. The amounts reflect the increase in U.K. market gas prices relative to the prices included in the contracts. These contracts are expected to be settled in full by physical delivery of the underlying commodity.

Derivatives	2005 2004 200	3
	(millions of dollars)	
Net receivable/(payable)	\$(426) \$ 6 \$(1	7)
Net gain/(loss), before tax	\$(312) \$38 \$	4
Net gain/(loss), after tax	\$(188) \$40 \$	3

The fair value of derivatives outstanding at year-end 2005 and loss recognized during the year are immaterial in relation to the Corporation's year-end cash balance of \$28.7 billion, total assets of \$208.3 billion or net income for the year of \$36.1 billion.

12. Long-Term Debt

At December 31, 2005, long-term debt consisted of \$6,014 million due in U.S. dollars and \$206 million representing the U.S. dollar equivalent at year-end exchange rates of amounts payable in foreign currencies. These amounts exclude that portion of long-term debt, totaling \$515 million, which matures within one year and is included in current liabilities. The amounts of long-term debt maturing, together with sinking fund payments required, in each of the four years after December 31, 2006, in millions of dollars, are: 2007 – \$99, 2008 – \$284, 2009 – \$111 and 2010 – \$89. At December 31, 2005, the Corporation's unused long-term credit lines were not material.

Summarized long-term borrowings at year-end 2005 and 2004 were as shown in the table below:

	2005 (millions o	2004
Exxon Capital Corporation (1) 6.125% Guaranteed notes due 2008	\$ 160	\$ 160
SeaRiver Maritime Financial Holdings, Inc. (1)		
Guaranteed debt securities due 2006-2011 (2)	65	75
Guaranteed deferred interest debentures due 2012 - Face value net of unamortized discount plus accrued interest	1,391	1,249
A 4 Y Y Y Z Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y		

Mobil Services (Bahamas) Ltd.

Variable notes due 2035 (3)	972	-
Variable notes due 2034 (4)	311	311
Mobil Corporation 8.625% debentures due 2021	248	248
Industrial revenue bonds due 2007-2033 (5)	1,700	1,702
Other U.S. dollar obligations (6)	1,023	719
Other foreign currency obligations	153	195
Capitalized lease obligations (7)	197	354
Total long-term debt	\$ 6,220	\$ 5,013
10 Additional information is much ad footbase a bailtiming on more 63 to 67		

- (1) Additional information is provided for these subsidiaries on pages 63 to 67.
- (2) Average effective interest rate of 3.3% in 2005 and 1.5% in 2004.
 - (3) Average effective interest rate of 3.7% in 2005.
 - (4) Average effective interest rate of 3.3% in 2005, and 2.0% in 2004.
- (5) Average effective interest rate of 2.8% in 2005 and 1.8% in 2004.
 - (6) Average effective interest rate of 6.7% in 2005 and 6.0% in 2004.
 - (7) Average imputed interest rate of 7.5% in 2005 and 7.4% in 2004.

Index to Financial Statements

Condensed consolidating financial information related to guaranteed securities issued by subsidiaries

Exxon Mobil Corporation has fully and unconditionally guaranteed the 6.125% notes due 2008 (\$160 million of long-term debt at December 31, 2005) of Exxon Capital Corporation and the deferred interest debentures due 2012 (\$1,391 million long-term) and the debt securities due 2006 to 2011 (\$65 million long-term and \$10 million short-term) of SeaRiver Maritime Financial Holdings, Inc.

Exxon Capital Corporation and SeaRiver Maritime Financial Holdings, Inc. are 100-percent-owned subsidiaries of Exxon Mobil Corporation.

The following condensed consolidating financial information is provided for Exxon Mobil Corporation, as guarantor, and for Exxon Capital Corporation and SeaRiver Maritime Financial Holdings, Inc., as issuers, as an alternative to providing separate financial statements for the issuers. The accounts of Exxon Mobil Corporation, Exxon Capital Corporation and SeaRiver Maritime Financial Holdings, Inc. are presented utilizing the equity method of accounting for investments in subsidiaries.

	Co	Exxon Mobil Corporation Parent Guarantor		rporation Exxon Parent Capital		SeaRiver Maritime Financial Holdings, Inc.		All Other Subsidiaries of dollars)	Consolidating and Eliminating Adjustments	Consolidated
Condensed consolidated statement of income for 12 mon	ths e	ded Decem	ber 31	, 2005		(millions e	of aouars)			
Revenues and other income										
Sales and other operating revenue,		46.000								
including excise taxes	\$	15,081	\$	_	\$		\$343,874	s —	\$ 358,955	
Income from equity affiliates		32,996		-		6	7,584	(33,003)	7,583	
Other income		834				-	3,308		4,142	
Intercompany revenue	_	33,546	_	51	_	56	274,706	(308,359)		
Total revenues and other										
income		82,457		51		62	629,472	(341,362)	370,680	
Costs and other deductions										
Crude oil and product purchases		30,451		-		-	447,251	(292,483)	185,219	
Production and manufacturing								30000		
expenses		7,177		3		-	24,856	(5,217)	26,819	
Selling, general and administrative		444.5								
expenses		2,434		2		-	12,478	(512)	14,402	
Depreciation and depletion		1,341		2		_	8,909	_	10,253	
Exploration expenses, including dry							0.00			
holes		137		_		-	827	=	964	
Interest expense		2,723		15		159	7,775	(10,176)	496	
Excise taxes		_		-			30,742	20.20	30,742	
Other taxes and duties		21		_		_	41,533	-	41,554	
Income applicable to minority and							10.612.0		1,000	
preferred interests				-			799		799	
Total costs and other				_						
deductions		44,284		23		159	575,170	(308,388)	311,248	
Income before income taxes		38,173		28	_	(97)	54,302	(32,974)	59,432	
Income taxes		2,043		11		(36)	21,284	(52,57.1)	23,302	
Income from continuing operations	-	36,130	-	17	_	(61)	33,018	(32,974)	36,130	
Accounting change, net of income tax		50,150		1.7		(01)	33,016	(32,5/4)	50,150	
Net income	\$	36,130	\$	17	\$	(61)	\$ 33,018	\$ (32,974)	\$ 36,130	
110t meome	9	30,130	3	17	D	(01)	\$ 33,010	<u>\$ (32,974)</u>	5 30,130	

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

	Exxon Mobil Corporation Parent Guarantor		Exxon Capital Corporation		SeaRiver Maritime Financial Holdings, Inc. (millions o		All Other Subsidiaries	Consolidating and Eliminating Adjustments	Consolidated
Condensed consolidated statement of income for 12 mon	ths er	nded Decen	iber 31	. 2004		(militons o	y uonars)		
Revenues and other income									
Sales and other operating revenue,							mere Debu		
including excise taxes	\$	13,617	S	-	\$	_	\$277,635	s —	\$ 291,252
Income from equity affiliates		23,115		\sim		15	4,966	(23,135)	4,961
Other income		521				-	1,301	7473044	1,822
Intercompany revenue		24,147	_	33		22	196,653	(220,855)	_
Total revenues and other									
income		61,400		33		37	480,555	(243,990)	298,035
Costs and other deductions									
Crude oil and product purchases		23,217		-		_	324,920	(208,913)	139,224
Production and manufacturing								1,000	230.01
expenses		6,642		3		-	21,945	(5,365)	23,225
Selling, general and administrative		11111						1, 1, 1, 1, 1	
expenses		2,099		4		-	12,056	(310)	13,849
Depreciation and depletion		1,424		4		1	8,338	100	9,767
Exploration expenses, including dry									
holes		187		100		-	911	-	1,098
Interest expense		1,381		21		135	5,339	(6,238)	638
Excise taxes		-		-		-	27,263	_	27,263
Other taxes and duties		14		-		-	40,940	_	40,954
Income applicable to minority and preferred interests				_			776		776
Total costs and other						_	_		
deductions		34,964		32		136	442,488	(220,826)	256,794
Income before income taxes	-	26,436	_	1	0	(99)	38,067	(23,164)	41,241
Income taxes		1,106		(1)		(40)	14,846	(25,104)	15,911
Income from continuing operations	-	25,330	-	2	-	(59)	23,221	(23,164)	25,330
Accounting change, net of income tax		23,330		- 2		(35)	23,221	(23,104)	23,330
Net income	dr.	25 220	à		6	(50)	6 22 221	e (22.1.4)	6 26 220
Net income	2	25,330	\$	2	\$	(59)	\$ 23,221	\$ (23,164)	\$ 25,330
Condensed consolidated statement of income for 12 mon Revenues and other income Sales and other operating revenue,	ths e	nded Decen	aber 3	1, 2003					
including excise taxes	\$	11,328	\$	_	\$	_	\$ 225,726	s —	\$ 237,054
Income from equity affiliates		18,163	-	-		1	4,363	(18,154)	4,373
Other income		3,229		_			2,082	(20)	5,311
Intercompany revenue		17,918		33		19	142,930	(160,900)	
Total revenues and other	-		-						
income		50,638		33		20	375,101	(179,054)	246,738
Costs and other deductions	-	20,000	_		_	20	575,101	(1/2,021)	
Crude oil and product purchases		17,342					240,908	(150,592)	107,658
Production and manufacturing				-		_			
expenses		6,492		2		1	19,691	(4,926)	21,260
Selling, general and administrative		2.025					11.000	21.200	12.20
expenses		2,037		2 5		_	11,526	(169)	13,396
Depreciation and depletion		1,535		5		2	7,505	_	9,047

Exploration expenses, including dry holes	247			763		1,010
Interest expense	648	21	121	4,629	(5,212)	207
Excise taxes	1	_		23,854	(5,2,2)	23,855
Other taxes and duties	9			37,636	_	37,645
Income applicable to minority and preferred interests				694		694
Total costs and other						
deductions	28,311	30	124	347,206	(160,899)	214,772
Income before income taxes	22,327	3	(104)	27,895	(18,155)	31,966
Income taxes	1,367	(1)	(37)	9,677		11,006
Income from continuing operations	20,960	4	(67)	18,218	(18,155)	20,960
Accounting change, net of income tax	550			481	(481)	550
Net income	\$ 21,510	\$ 4	\$ (67)	\$ 18,699	\$ (18,636)	\$ 21,510
		64				

Table of Contents

Index to Financial Statements

Condensed consolidating financial information related to guaranteed securities issued by subsidiaries

	Exxon Corpo Par Guara	ration ent	C	Exxon Capital poration	1	SeaRiver Maritime Financial Idings, Inc. (millions o	All Other Subsidiaries	Eli	solidating and minating justments	Co	nsolidated
Condensed consolidated balance sheet for year ended Dece						(millions b					تصاميق
Cash and cash equivalents		,076	S	_	\$	_	\$ 16,595	\$	_	\$	28,671
Cash and cash equivalents - restricted		,604		_		-	-		_		4,604
Notes and accounts receivable - net		,183		_			25,301		_		27,484
Inventories		,241		-			8,080		-		9,321
Prepaid taxes and expenses	-	117	-	_	_		3,145	_		-	3,262
Total current assets		,221		-		205	53,121		- AF 000)		73,342
Investments and advances		,033		92		375	403,173		545,989)		20,592
Property, plant and equipment – net Other long-term assets		5,537		92		74	91,381				107,010 7,391
Intercompany receivables		,257 1,569		1,041		1,768	6,060 377,176	1	394,554)		7,391
Total assets			\$		0					6	209 225
Total assets	\$ 214	,01/	2	1,133	\$	2,217	\$930,911	2 (940,543)	2	208,335
Notes and loans payable	\$	446	\$	-	\$	10	\$ 1,315	\$	=	\$	1,771
Accounts payable and accrued liabilities	1	,137		3		1	32,979		_		36,120
Income taxes payable		553	_	1	_	2	7,860	_		_	8,416
Total current liabilities	- 2	,136		4		13	42,154		_		46,307
Long-term debt		270		160		1,456	4,334		_		6,220
Deferred income tax liabilities		2,909		27		257	17,685		_		20,878
Other long-term liabilities		5,412		13			18,319	٠,			23,744
Intercompany payables),705	_	121	_	383	303,345	_	394,554)	_	
Total liabilities	103	3,432	_	325	_	2,109	385,837	_(394,554)	_	97,149
Earnings reinvested		3,335		23		(361)	108,770		108,432)		163,335
Other shareholders' equity	(52	2,150)		785		469	436,304	_(437,557)	_	(52,149
Total shareholders' equity	111	,185		808		108	545,074	_(545,989)	2	111,186
Total liabilities and shareholders' equity	\$ 214	1,617	\$	1,133	\$	2,217	\$930,911	\$ (940,543)	\$	208,335
Condensed consolidated balance sheet for year ended Dece											
Cash and cash equivalents		0,055	\$	4	\$	_	\$ 8,472	\$	_	\$	18,531
Cash and cash equivalents - restricted		1,604		-		-	42.00		-		4,604
Notes and accounts receivable - net		3,262		-		_	22,097		_		25,359
Inventories		1,117		_		_	8,370		_		9,487
Prepaid taxes and expenses	-	79	-	-	_	_=	2,317	-		-	2,396
Total current assets),117		4			41,256		-		60,377
Investments and advances		3,395		0.5		416	369,455	(489,862)		18,404
Property, plant and equipment – net		5,601		95		00	92,943				108,639
Other long-term assets		1,512		1.000		90	6,234 322,469		224 001)		7,836
Intercompany receivables		7,728	-	1,090	-	1,594			334,881)	-	105.056
Total assets	\$ 184	1,353	\$	1,189	\$	2,100	\$ 832,357	\$ (824,743)	2	195,256
Notes and loans payable	\$	-	\$	_	\$	10	\$ 3,270	\$	-	\$	3,280
Accounts payable and accrued liabilities		2,934		3		-	28,826		3-		31,763
Income taxes payable		1,348	-	_	-	1	6,589		-5-	_	7,938
Total current liabilities		1,282		3		11	38,685		-		42,981
Long-term debt		261		160		1,324	3,268		-		5,013
Deferred income tax liabilities		3,152		28		268	17,644		-		21,092

Other long-term liabilities	5,461	22	_	18,931	A	24,414
Intercompany payables	69,441	185	403	264,852	(334,881)	_
Total liabilities	82,597	398	2,006	343,380	(334,881)	93,500
Earnings reinvested	134,390	6	(300)	81,380	(81,086)	134,390
Other shareholders' equity	(32,634)	785	394	407,597	(408,776)	(32,634)
Total shareholders' equity	101,756	791	94	488,977	(489,862)	101,756
Total liabilities and shareholders' equity	\$ 184,353	\$ 1,189	\$ 2,100	\$832,357	\$ (824,743)	\$ 195,256

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

	Exxon Mobil Corporation Parent Guarantor	Parent Capital		M Fi	eaRiver aritime inancial dings, Inc.	All Other Subsidiaries	Consolidating and Eliminating Adjustments	Consolidated	
Condensed consolidated statement of cash flows	for 12 months	ended D	ecember 31.	2005	(millions o	j aouars)			
Cash provided by/(used in) operating activities	¢ 11 520	•	11	S	129	\$ 42,088	\$ (5,628)	\$ 48,138	
Cash flows from investing activities	\$ 11,538	1	11	2	129	\$ 42,000	3 (3,020)	3 40,130	
Additions to property, plant									
and equipment	(1,296	3				(12,543)		(13,839)	
Sales of long-term assets	314					5,722		6,036	
Increase in restricted cash and						5,.22		0,020	
cash equivalents			_		-	_	-	_	
Net intercompany investing	15,483		49		(173)	(15,557)	198	_	
All other investing, net	1					(2,468)	_	(2,467)	
Net cash provided by/									
(used in) investing									
activities	14,502	9	49		(173)	(24,846)	198	(10,270)	
Cash flows from financing activities		7							
Additions to short- and long-									
term debt	_		-		_	572	_	572	
Reductions in short- and long-					W. C.	V. 1.00			
term debt	_		-		(10)	(758)	_	(768)	
Additions/(reductions) in debt									
with less than 90-day	410					7. EPA		0.440	
maturity	446					(1,752)	5.600	(1,306)	
Cash dividends	(7,185				_	(5,628)	5,628	(7,185)	
Common stock acquired Net intercompany financing	(18,221)			-	_	_	(18,221)	
activity			(64)		(21)	208	(123)		
All other financing, net	941		(04)		75	(974)	(75)	(33)	
Net cash provided by/		~			15		(13)	(33)	
(used in) financing									
activities	(24,019	()	(64)		44	(8,332)	5,430	(26,941)	
Effects of exchange rate changes on		-	(01)	-		(0,552)	2,120	(20,5 1.1)	
cash			-		_	(787)		(787)	
Increase/(decrease) in cash and cash		-		-					
equivalents	\$ 2,021	\$	(4)	\$		\$ 8,123	s —	\$ 10,140	
4	,0-1	-		-		4 4,125	-	* *****	
Condensed consolidated statement of cash flows	for 12 months	ended D	ecember 31.	2004					
Cash provided by/(used in) operating									
activities	\$ 21,515	\$	8	\$	44	\$ 32,837	\$ (13,853)	\$ 40,551	
Cash flows from investing activities		-							
Additions to property, plant									
and equipment	(1,101)	_			(10,885)	-	(11,986)	
Sales of long-term assets	521		-		-	2,233	-	2,754	
Increase in restricted cash and	Advantage							3.1.1.2.2	
cash equivalents	(4,604		-		-	a 20 20		(4,604)	
Net intercompany investing	5,109		24		(55)	(5,224)	146		
All other investing, net	2	1		<u></u>		(1,076)	- T	(1,074)	
Net cash provided by/									

(used in) investing activities	(73)	24	(55)	(14,952)	146	(14,910)
Cash flows from financing activities		-	400)	(1,522)		
Additions to short- and long- term debt		_	-	920	=	920
Reductions in short- and long-						
term debt	(1,146)	(106)	(10)	(1,543)	_	(2,805)
Additions/(reductions) in debt with less than 90-day		- 1,000		-,0000		4.44.1.24
maturity	-	_	-	(66)		(66)
Cash dividends	(6,896)	-	_	(13,853)	13,853	(6,896)
Common stock acquired	(9,951)	-	_			(9,951)
Net intercompany financing	916.334					
activity	-	78	21	47	(146)	-
All other financing, net	959		-	(429)		530
Net cash provided by/ (used in) financing						
activities	(17,034)	(28)	11	(14,924)	13,707	(18,268)
Effects of exchange rate changes on						
cash	3-0	·		532	-	532
Increase/(decrease) in cash and cash	0			0.00		
equivalents	\$ 4,408	\$ 4	\$	\$ 3,493	<u>s — </u>	\$ 7,905
		24				
		66				

Index to Financial Statements

Condensed consolidating financial information related to guaranteed securities issued by subsidiaries

	Cor	on Mobil poration arent arantor	ion Exxo Capi		Ma Fin	River ritime ancial ngs, Inc. (millions o	All Other Subsidiaries		Consolidating and Eliminating Adjustments		Con	solidated
Condensed consolidated statement of cash flows	or 12 r	nonths ende	d Dece	mber 31, 2	003	(militaria e	, woner	3/				
Cash provided by/(used in) operating												
activities	\$	4,797	\$	23	\$	60	\$ 2	4,945	\$	(1,327)	\$	28,498
Cash flows from investing activities Additions to property, plant and equipment		(1,691)					(1	1,168)				(12,859)
Sales of long-term assets		238		_		-	1.	2,052				2,290
Increase in restricted cash and cash equivalents		200						2,002				2,250
		12 555		201		(50)	7.	2 5223		(262)		
Net intercompany investing		13,555		281		(50)	(1	3,523)		(263)		(072)
All other investing, net	_	~~	_	_	-	-	_	(273)	_		_	(273)
Net cash provided by/ (used in) investing		ou ton		223		Value.				arles.		11 L 2 120
activities		12,102		281		(50)	(2	22,912)		(263)		(10,842)
Cash flows from financing activities Additions to short- and long- term debt								842				842
Reductions in short- and long-								0,12				0.12
term debt		_		_		_		(2,644)		-		(2,644)
Additions/(reductions) in debt with less than 90-day												Server I
maturity		-		(6)		(10)		(306)		_		(322)
Cash dividends		(6,515)		(93)		_		(1,234)		1,327		(6,515)
Common stock acquired		(5,881)		3-6		-		2-2				(5,881)
Net intercompany financing		44.5										
activity		9		(184)		_		(58)		242		_
All other financing, net		434		(21)		-		(677)		21		(243)
Net cash provided by/ (used in) financing												
activities	- 1	(11,962)		(304)		(10)		(4,077)		1,590		(14,763)
Effects of exchange rate changes on	-	(11,502)	-	(201)	-	(10)		(1,01.)	_	4,000		(-1)
cash	-		_	=	_	_	_	504	_		_	504
Increase/(decrease) in cash and cash equivalents	\$	4,937	\$	_	\$	=	\$	(1,540)	\$	_	\$	3,397

13. Incentive Program

The 2003 Incentive Program provides for grants of stock options, stock appreciation rights (SARs), restricted stock and other forms of award. Awards may be granted to eligible employees of the Corporation and those affiliates at least 50 percent owned. The maximum number of shares of stock that may be issued under the 2003 Incentive Program is 220 million. Awards that are forfeited or expire, or are settled in cash, do not count against this maximum limit. The 2003 Incentive Program does not have a specified term. New awards may be made until the available shares are depleted, unless the Board terminates the plan early. Outstanding awards are subject to certain forfeiture provisions contained in the program or award instrument. Shares available for granting under the 2003 Incentive Program were 188,928 thousand at the end of 2005.

As under earlier programs, options and SARs may be granted at prices not less than 100 percent of market value on the date of grant and have a maximum life of 10 years. Most of the options and SARs normally first become exercisable one year following the date of grant. All remaining stock options and SARs outstanding were granted prior to 2002.

Long-term incentive awards totaling 11,071 thousand, 11,374 thousand and 10,381 thousand shares of restricted (nonvested) common stock units were granted in 2005, 2004 and 2003, respectively. These shares are issued to employees from treasury stock. The total compensation expense is recognized over the requisite service period. The units that are settled in cash are recorded as liabilities and their changes in fair value are recognized over the vesting period. During the applicable restricted periods, the shares may not be sold or transferred and are subject to forfeiture. The majority of the awards have graded vesting periods, with 50 percent of the shares in each award vesting after three years and the remaining 50 percent vesting after seven years. A small number of awards granted to certain employees have longer vesting periods. The table on the following page provides additional details on restricted stock awards in 2003, 2004, and 2005.

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table summarizes information about restricted stock and restricted stock units, including those shares from former Mobil plans:

Restricted Stock and Units		(thousands)	2003	
Shares/Units:		(assey)		
Granted	11,071	11,374	10,381	
Issued and outstanding at end of year	29,530	23,159	13,089	
Grant price	\$ 58.43	\$ 51.07	\$ 36.11	
	1	millions of dollars	5)	
Value:				
Restricted stock and units settled in stock granted	\$ 611	\$ 554	\$ 357	
Units settled in cash granted	36	27	18	
Total grant	\$ 647	\$ 581	\$ 375	

Changes that occurred in stock options in 2005, 2004 and 2003 are summarized below (shares in thousands):

		2005			2004				2003		
Stock Options	Shares	Av	g. Exercise Price	Shares	Av	g. Exercise Price	Shares	Av	g. Exercise Price		
Outstanding at beginning of year	180,912	\$	35.55	223,750	\$	33.09	246,995	\$	31.59		
Exercised	(33,007)		28.61	(42,588)		22.57	(22,757)		16.80		
Expired/canceled	(131)		35.45	(250)		39.91	(488)		35.86		
Outstanding at end of year	147,774		37.11	180,912		35.55	223,750		33.09		
Exercisable at end of year	147,774		37.11	180,912		35.55	222,054		33.06		

The following table summarizes information about stock options outstanding at December 31, 2005 (shares in thousands):

	Options Outstanding and Ex	ercisable		
Exercise Price Range	Shares	Avg. Remaining Contractual Life	Av	g. Exercise Price
\$ 21.78 - 31.70	41,347	2.4 years	\$	28.01
36.18 - 45.22	106,427	4.6 years		40.64
Total	147,774	4.0 years	\$	37.11

14. Litigation and Other Contingencies

Litigation

A variety of claims have been made against ExxonMobil and certain of its consolidated subsidiaries in a number of pending lawsuits and tax disputes. The Corporation accrues an undiscounted liability for those contingencies where the incurrence of a loss is probable and the amount can be reasonably estimated. The Corporation does not record liabilities when the likelihood that the liability has been incurred is probable but the amount cannot be reasonably estimated, or when the liability is believed to be only reasonably possible or remote. ExxonMobil will continue to defend itself vigorously in these matters. Based on a consideration of all relevant facts and circumstances, the Corporation does not believe the ultimate outcome of any currently pending lawsuit against ExxonMobil will have a materially adverse effect upon the Corporation's operations or financial condition.

A number of lawsuits, including class actions, were brought in various courts against Exxon Mobil Corporation and certain of its subsidiaries relating to the accidental release of crude oil from the tanker Exxon Valdez in 1989. The vast majority of the compensatory claims have been resolved and paid. All of the punitive damage claims were consolidated in the civil trial that began in 1994. The first judgment from the United States District Court for the District of Alaska in the amount of \$5 billion was vacated by the United States Court of Appeals for the Ninth Circuit as being excessive under the Constitution. The second judgment in the amount of \$4 billion was vacated by the Ninth Circuit panel without argument and sent back for the District Court to reconsider in light of the recent U.S. Supreme Court decision in Campbell v. State Farm. The most recent District Court judgment for punitive damages was for \$4.5 billion plus interest and was entered in January 2004. ExxonMobil and the plaintiffs have appealed this decision to the Ninth Circuit. The Corporation has posted a \$5.4 billion letter of credit. Oral arguments were held before the Ninth Circuit on January 27, 2006. Management believes that the likelihood of the judgment being upheld is remote. While it is reasonably possible that a liability may have been incurred from the Exxon Valdez grounding,

Index to Financial Statements

it is not possible to predict the ultimate outcome or to reasonably estimate any such potential liability.

In December 2000, a jury in the 15th Judicial Circuit Court of Montgomery County, Alabama, returned a verdict against the Corporation in a dispute over royalties in the amount of \$88 million in compensatory damages and \$3.4 billion in punitive damages in the case of Exxon Corporation v. State of Alabama, et al. The verdict was upheld by the trial court in May 2001. In December 2002, the Alabama Supreme Court vacated the \$3.5 billion jury verdict. The case was retried and in November 2003, a state district court jury in Montgomery, Alabama, returned a verdict against Exxon Mobil Corporation. The verdict included \$63.5 million in compensatory damages and \$11.8 billion in punitive damages. In March 2004, the district court judge reduced the amount of punitive damages to \$3.5 billion. ExxonMobil believes the judgment is not justified by the evidence, that any punitive damage award is not justified by either the facts or the law, and that the amount of the award is grossly excessive and unconstitutional. ExxonMobil has appealed the decision to the Alabama Supreme Court. Management believes that the likelihood of the judgment being upheld is remote. While it is reasonably possible that a liability may have been incurred by ExxonMobil from this dispute over royalties, it is not possible to predict the ultimate outcome or to reasonably estimate any such potential liability. In May 2004, the Corporation posted a \$4.5 billion supersedeas bond as required by Alabama law to stay execution of the judgment pending appeal. The Corporation has pledged to the issuer of the bond collateral consisting of cash and short-term, high-quality securities with an aggregate value of approximately \$4.6 billion. This collateral is reported as restricted cash and cash equivalents on the Consolidated Balance Sheet. Under the terms of the pledge agreement, the Corporation is entitled to receive the income generated from the cash and securities and to make investment decisions, but is restricted from using the pledged cash and securities for any other purpose until such time the bond is canceled.

In 2001, a Louisiana state court jury awarded compensatory damages of \$56 million and punitive damages of \$1 billion to a landowner for damage caused by a third party that leased the property from the landowner. The third party provided pipe cleaning and storage services for the Corporation and other entities. The Louisiana Fourth Circuit Court of Appeals reduced the punitive damage award to \$112 million in 2005. The Corporation appealed this decision to the Louisiana Supreme Court as it continues to believe that these judgments should be substantially reduced on legal and constitutional grounds. While it is reasonably possible that a liability may have been incurred, it is not possible to predict the ultimate outcome or to reasonably estimate any such potential liability.

In Allapattah v. Exxon, a jury in the United States District Court for the Southern District of Florida determined in 2001 that a class of Exxon dealers between March 1983 and August 1994 had been overcharged for gasoline. In June 2003, the Eleventh Circuit Court of Appeals affirmed the judgment and in March 2004, denied a petition for Rehearing En Banc. In October 2004, the U.S. Supreme Court granted review as to whether the class in the District Court judgment should include members that individually do not satisfy the \$50,000 minimum amount-in-controversy requirement in federal court. In light of the Supreme Court's decision to grant review of only part of ExxonMobil's appeal, the Corporation took an after-tax charge of \$550 million in the third quarter of 2004 reflecting the estimated liability, after considering potential set-offs and defenses for the claims under review by the Supreme Court. In June 2005, the Supreme Court granted the District Court the right to hear the claims of all class members and the Corporation took an after-tax charge of \$200 million. Class counsel and ExxonMobil are seeking court approval of a settlement of \$1,075 million, pre-tax that would essentially finalize the Corporation's financial obligation in the case; this obligation has been fully accrued. The trial court has preliminarily approved the settlement. Notice has been issued to the class and the final approval hearing will occur in April 2006.

Tax issues for 1986 to 1993 remain pending before the U.S. Tax Court. The ultimate resolution of these issues is not expected to have a materially adverse effect upon the Corporation's operations or financial condition.

Other Contingencies

The Corporation and certain of its consolidated subsidiaries were contingently liable at December 31, 2005, for \$3,893 million, primarily relating to guarantees for notes, loans and performance under contracts. This included \$1,020 million representing guarantees of non-U.S. excise taxes and customs duties of other companies, entered into as a normal business practice, under reciprocal arrangements. Also included in this amount were guarantees by consolidated affiliates of \$2,649 million, representing ExxonMobil's share of obligations of certain equity companies.

Equity Other
Company Third-Party

	Ob	ligations (m		ligations of dollars)	Total
Guarantees of excise taxes/customs duties under reciprocal arrangements	\$	_	\$	1,020	\$1,020
Other guarantees		2,649	72	224	2,873
Total	\$	2,649	\$	1,244	\$3,893

Additionally, the Corporation and its consolidated subsidiaries have numerous long-term sales and purchase commitments in their various business activities, all of which are expected to be fulfilled with no adverse consequences material to the Corporation's operations or financial condition. Unconditional purchase obligations, as defined by accounting standards, are those long-term commitments that are non-cancelable or cancelable only under certain conditions, and that third parties have used to secure financing for the facilities that will provide the contracted goods or services.

		Payments Due by Period					
	2006	2007- 2010 (millions	2011 and Beyond of dollars)	Total			
obligations (1)	\$569	\$1,909	\$2,098	\$4,576			

⁽¹⁾ Undiscounted obligations of \$4,576 million mainly pertain to pipeline throughput agreements and include \$2,324 million of obligations to equity companies. The present value of these commitments, excluding imputed interest of \$1,248 million, totaled \$3,328 million.

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

15. Annuity Benefits and Other Postretirement Benefits

		Annuity Benefits				Other Postretirement			
		U.S.			Non-U.S.			Benefits	
	2005	2004	2003	2005	2004	2003	2005	2004	2003
Components of net benefit cost				(milli)	ons of dolla	(rs)			
Service cost	\$ 330	\$ 308	\$ 284	\$ 382	\$ 357	\$ 326	\$ 70	\$ 62	\$ 36
Interest cost	611	611	624	834	812	728	301	295	234
Expected return on plan assets	(629)	(618)	(418)	(789)	(684)	(552)	(39)	(36)	(31)
Amortization of actuarial loss/(gain) and	4	2000	4		1			4	4
prior service cost	274	286	321	424	378	384	204	191	96
Net pension enhancement and					1000				
curtailment/settlement expense	123	177	204	10	3	37	-		-
Net benefit cost	\$ 709	\$ 764	\$1,015	\$ 861	\$ 866	\$ 923	\$ 536	\$ 512	\$ 335
Weighted-average assumptions used to									
December 31					(percent)				
Discount rate	5.75	6.00	6.75	4.9	5.2	5.2	5.75	6.00	6.75
Long-term rate of return on funded assets	9.00	9.00	9.00	7.7	7.7	7.7	9.00	9.00	9.00
Long-term rate of compensation increase	3.50	3.50	3.50	3.8	3.8	3.9	3.50	3.50	3.50
Discount rate Long-term rate of return on funded assets	9.00	9.00	9.00	7.7	7.7	7.7	9.00	9.00	9.0

Costs for defined contribution plans were \$251 million, \$245 million and \$253 million in 2005, 2004 and 2003, respectively.

The benefit obligations and plan assets associated with the Corporation's principal benefit plans are measured on December 31.

Annuity Benefits				Other Postretirement	
U.	S.	Non-	U.S.	Ben	0.0000000000000000000000000000000000000
2005	2004	2005	2004	2005	2004
		(millions of	dollars)		
\$10,770	\$10,280	\$18,704	\$16,313	\$5,388	\$4,960
330	308	382	357	70	62
611	611	834	812	301	295
279	700	1,608	874	(17)	330
(809)	(1,127)	(1,037)	(1,020)	(431)	(350)
_		(1,577)	1,182	15	29
-	(2)	396	186	44	62
\$11,181	\$10,770	\$19,310	\$18,704	\$5,370	\$5,388
\$ 9,477	\$ 9,193	\$17,467	\$17,003	\$ —	_
		(perce	ent)		
5.75	5.75	4.5	4.9	5.75	5.75
3.50	3.50	3.9	3.8	3.50	3.50
	\$10,770 330 611 279 (809) — \$11,181 \$ 9,477	\$10,770 \$10,280 330 308 611 611 279 700 (809) (1,127) — (2) \$11,181 \$10,770 \$ 9,477 \$9,193	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	U.S. Non-U.S. Postreti Bene

⁽i) The term benefit obligation means "projected benefit obligation" as defined by Statement of Financial Accounting Standards No. 87 (FAS 87), "Employers' Accounting for Pensions," for annuity benefits and "accumulated postretirement benefit obligation" as defined by FAS 106, "Employers' Accounting for Postretirement Benefits Other than Pensions," for other postretirement benefits.

For U.S. plans, the discount rate is determined by constructing a portfolio of high-quality, non-callable bonds with cash flows

that match estimated outflows for benefit payments. For major non-U.S. plans, the discount rate is determined by using bond portfolios with an average maturity approximating that of the liabilities or spot yield curves, both of which are constructed using high-quality, local-currency-denominated bonds.

The measurement of the accumulated postretirement benefit obligation assumes a health care cost trend rate of 4.5 percent for 2006 that declines to 2.5 percent by 2011. A one-percentage-point increase in the health care cost trend rate would increase service and interest cost by \$32 million and the postretirement benefit obligation by \$352 million. A one-percentage-point decrease in the health care cost trend rate would decrease service and interest cost by \$26 million and the postretirement benefit obligation by \$299 million.

Index to Financial Statements

The Corporation offers a Medicare supplement plan to Medicare-eligible retirees that provides prescription drug benefits. On December 8, 2003, the President of the United States signed into law the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (the "Act"). The Act provides a federal subsidy to employers sponsoring retiree health care benefit plans that provide a benefit that is at least actuarially equivalent to Medicare Part D. The Corporation believes that its Medicare supplement plan is at least actuarially equivalent to Medicare Part D but that it is not a significant event for the plan. Accordingly, the Corporation recognized the effects of the Act at the December 31, 2004, measurement date which reduced the year-end 2004 benefit obligation by \$383 million and the 2005 net benefit cost by \$57 million.

		Other Postretirement					
	U	U.S.			Bene	-1.200 E-1.00	
	2005	2004	2005	2004	2005	2004	
approximation and the second s			(millions of	dollars)			
Change in plan assets							
Fair value at January 1	\$7,299	\$ 7,301	\$10,673	\$ 9,185	\$ 444	\$ 412	
Actual return on plan assets	626	967	1,871	1,086	30	50	
Foreign exchange rate changes		-	(860)	691		-	
Payments directly to participants	134	157	323	303	313	236	
Company contribution	-		1,055	473	36	34	
Benefits paid	(809)	(1,127)	(1,037)	(1,020)	(431)	(350)	
Other		1	38	(45)	64	62	
Fair value at December 31	\$7,250	\$ 7,299	\$12,063	\$10,673	\$ 456	\$ 444	

The data on the preceding page conform with current accounting standards that specify use of a discount rate at which postretirement liabilities could be effectively settled. The discount rate for calculating year-end postretirement liabilities is based on the year-end rate of interest on a portfolio of high-quality bonds. The return on the annuity fund's actual portfolio of assets has historically been higher than bonds as the majority of pension assets are invested in equities, as illustrated in the table below, which shows asset allocation. The U.S. long-term expected rate of return of 9.0 percent used in 2005 compares to an actual rate of return for the U.S. annuity fund over the past decade of 11 percent. The Corporation establishes the long-term expected rate of return for each plan by developing a forward-looking, long-term return assumption for each asset class, taking into account factors such as the expected real return for the specific asset class and inflation. A single, long-term rate of return is then calculated as the weighted average of the target asset allocation and the long-term return assumption for each asset class.

		Annuity Benefits				
	U.S	U.S. Non-U.S.		Postretirement Benefits		
	2005	2004	2005 (per	2004 cent)	2005	2004
Funded benefit plan asset allocation			9.00	0.24		
Equity securities	75%	75%	68%	69%	75%	76%
Debt securities	25	25	28	29	25	24
Other		-	4	2	-	-
Total	100%	100%	100%	100%	100%	100%

The Corporation's investment strategy for benefit plan assets reflects a long-term view, a careful assessment of the risks inherent in various asset classes and broad diversification to reduce the risk of the portfolio. The Corporation primarily invests in funds that follow an index-based strategy to achieve its objectives of diversifying risk while minimizing costs. The funds hold ExxonMobil stock only to the extent necessary to replicate the relevant equity index. Asset-liability studies, or simulations of the interaction of cash flows associated with both assets and liabilities, are periodically used to establish the preferred target asset allocation. The target asset allocation for equity securities of 75 percent for the U.S. benefit plans and 67 percent for non-U.S. plans reflects the long-term nature of the liability. The balance of the funds is largely targeted to debt securities.

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The funding levels of all qualified plans are in compliance with standards set by applicable law or regulation. Certain smaller U.S. plans and a number of non-U.S. plans are not funded because local tax conventions and regulatory practices do not encourage funding of these plans. All defined-benefit pension obligations, regardless of the funding status of the underlying plans, are fully supported by the financial strength of the Corporation or the respective sponsoring affiliate.

A summary comparing the total plan assets to the total projected benefit obligation is shown in the table below:

	Anaulty Benefits				Other Postretirement		
	U.	S.	Non-	U.S.	Ben		
	2005	2004	2005	2004	2005	2004	
Aponto in average of/(loss them) analogs of Langes ablication			(millions o	f dollars)			
Assets in excess of/(less than) projected benefit obligation							
Balance at December 31 (1)	\$(3,931)	\$(3,471)	\$(7,247)	\$(8,031)	\$(4,914)	\$(4,944)	
Unrecognized net transition liability/(asset)			10	2	-		
Unrecognized net actuarial loss/(gain)	2,551	2,638	4,847	4,859	1,562	1,696	
Unrecognized prior service cost	144	172	491	512	474	567	
Net amount recognized	\$(1,236)	\$ (661)	\$(1,899)	\$(2,658)	\$(2,878)	\$(2,681)	
Amounts recognized in the consolidated balance sheet consist of:							
Prepaid benefit cost (2)	\$ 37	\$ 71	\$ 715	\$ 713	\$ -	s -	
Accrued benefit cost (3)	(2,256)	(1,951)	(5,926)	(7,081)	(2,878)	(2,681)	
Intangible assets	204	244	388	712	_		
Equity of minority shareholders		1.3	178	117		-	
Accumulated other nonowner changes in equity,							
minimum pension liability adjustment	779	975	2,746	2,881			
Net amount recognized	\$(1,236)	\$ (661)	\$(1,899)	\$(2,658)	\$(2,878)	\$(2,681)	

- (1) Fair value of assets less projected benefit obligation shown in the preceding tables.
- (2) Included in "Other assets, including intangibles, net" on the Consolidated Balance Sheet.
- (3) Long-term portion in "Annuity Reserves" and short-term portion in "Accounts payable and accrued liabilities" on the Consolidated Balance Sheet.

	Annuity I	Benefits	Other Postretirement Benefits			
	U.S.	Non-U.S.	Gross s of dollars)	Medicare Subs Receipt	idy	
Contributions expected in 2006	\$0-500(1)	\$ 700	\$ 35	s -		
Benefit payments expected in:	00 000					
2006	684	974	383		20	
2007	739	988	391		21	
2008	784	1,012	399		22	
2009	839	1,037	407		22	
2010	870	1,075	417		23	
2011 - 2015	5,129	6,228	2,161	1	21	

⁽¹⁾ Amount depends on outcome of pending legislation.

A summary of the change in other nonowner changes in equity related to the minimum pension liability adjustment is shown in the table below;

	-	Annuity otal (U.S. ar		J.S.)
		2005	2004	
	-	(millions o	f dollars)	
Increase/(decrease) in accumulated other nonowner changes in equity, before tax Deferred income tax (charge)/credit (see note 17, page 75)	\$	(90)	\$	(4) (49)
Increase/(decrease) in accumulated other nonowner changes in equity, after tax (see Consolidated Statement of Shareholders' Equity, page 50)	\$	241	\$	(53)

Index to Financial Statements

A summary of pension plans with an accumulated benefit obligation in excess of plan assets is shown in the table below:

	-7-	Annuit	y Benefits	
	U	S.	Non	-U.S.
	2005	2004	2005	2004
		(million:	s of dollars)	100
For <u>funded</u> pension plans with accumulated benefit obligations in excess of plan				
assets:				
Projected benefit obligation	\$9,816	\$9,397	\$11,352	\$11,552
Accumulated benefit obligation	8,356	8,038	10,480	10,681
Fair value of plan assets	7,198	7,127	8,876	8,128
Accumulated benefit obligation less fair value of plan assets	1,158	911	1,604	2,553
For unfunded plans covered by book reserves:				
Projected benefit obligation	1,343	1,260	4,757	4,827
Accumulated benefit obligation	1,098	1,041	4,211	4,305

16. Disclosures about Segments and Related Information

The Upstream, Downstream and Chemical functions best define the operating segments of the business that are reported separately. The factors used to identify these reportable segments are based on the nature of the operations that are undertaken by each segment. The Upstream segment is organized and operates to explore for and produce crude oil and natural gas. The Downstream segment is organized and operates to manufacture and sell petroleum products. The Chemical segment is organized and operates to manufacture and sell petrochemicals. These segments are broadly understood across the petroleum and petrochemical industries.

These functions have been defined as the operating segments of the Corporation because they are the segments (a) that engage in business activities from which revenues are earned and expenses are incurred; (b) whose operating results are regularly reviewed by the Corporation's chief operating decision maker to make decisions about resources to be allocated to the segment and assess it's performance; and (c) for which discrete financial information is available.

Earnings after income tax include special items and transfers are at estimated market prices. Special items included in 2005 after-tax earnings are a \$1,620 million gain in Non-U.S. Upstream for the restructuring of a Dutch gas equity company, a \$390 million gain in Non-U.S. Chemical relating to joint venture litigation, gains of \$310 million and \$150 million in Non-U.S. Downstream and Non-U.S. Chemical, respectively, for the Sinopec share sale and a charge of \$200 million in U.S. Downstream relating to the Allapattah lawsuit provision. U.S. Downstream after-tax earnings in 2004 included a charge of \$550 million relating to Allapattah. Upstream earnings in 2003 include \$1,700 million from a gain on the transfer of shares in Ruhrgas AG, a German gas transmission company. All Other after-tax earnings in 2003 include \$2,230 million relating to the positive settlement of a long-running U.S. tax dispute. All Other after-tax earnings in 2003 also include a \$550 million positive impact for the required adoption of FAS 143 relating to accounting for asset retirement obligations.

Interest expense includes non-debt related interest expense of \$369 million, \$529 million and \$106 million in 2005, 2004 and 2003, respectively. The increase of \$423 million from 2003 to 2004 primarily reflects the interest component of the Allapattah lawsuit provision. The subsequent decrease of \$160 million in 2005 reflects a lower interest component for Allapattah.

The Other segment includes corporate and financing activities. The interest revenue amount relates to interest earned on cash deposits and marketable securities.

Index to Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

	Upst	Upstream Dov		Downstream Cher				
	U.S.	Non-U.S.	U,S	Non-U.S.	U.S. of dollars)	Non-U.S.	Other	Total Total
As of December 31, 2005				***************************************				
Earnings after income tax	\$ 6,200	\$18,149	\$ 3,911	\$ 4,081	\$ 1,186	\$ 2,757	\$ (154)	\$ 36,130
Earnings of equity companies included								
above	1,106	5,084	165	471	53	954	(250)	7,583
Sales and other operating revenue (1)	6,730	23,324	91,954	205,726	11,842	19,344	35	358,955
Intersegment revenue	7,230	31,371	9,817	40,255	6,521	5,413	290	_
Depreciation and depletion expense	1,293	5,407	615	1,611	416	410	501	10,253
Interest revenue	_	_		-	-	-	946	946
Interest expense	30	32	230	34	4	4	162	496
Income taxes	3,516	15,968	2,139	1,362	447	794	(924)	23,302
Additions to property, plant and equipment	1,763	8,796	662	1,618	218	268	514	13,839
Investments in equity companies	1,470	6,735	420	937	275	2,282	(3)	12,116
Total assets	20,827	66,239	16,110	47,691	7,794	11,702	37,972	208,335
As of December 31, 2004								
Earnings after income tax	\$ 4,948	\$11,727	\$ 2,186	\$ 3,520	\$ 1,020	\$ 2,408	\$ (479)	\$ 25,330
Earnings of equity companies included	Ψ 1,210	D11,121	Ψ 2,100	p 2,220	0 1,020	,	4 (11.5)	9 40,000
above	904	2,709	138	466	31	914	(201)	4,961
Sales and other operating revenue (1)	5,990	17,043	71,645	168,768	10,729	17,052	25	291,252
Intersegment revenue		21,800	8,047	26,577	4,937	4,278	306	291,232
	6,547		618	1,646		400	484	9,767
Depreciation and depletion expense Interest revenue	1,453	4,758	010	1,040	400	400	361	361
Interest revenue	25	27	431	33		1	119	638
Income taxes	2,733	10,168	1,371	1,073			(615)	15,911
Additions to property, plant and equipment	1,465	7,358	668	1,472	247	201	575	11,986
Investments in equity companies	1,347	6,595	401	1,047		2,079	(3)	11,742
Total assets	19,330	62,204	14,685	49,688	8,102	13,052	28,195	195,256
2 2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	19,550	02,204	14,003	= 47,000	0,102	15,000	====	170,200
As of December 31, 2003	0 2 005	610 507	6 1 240	0 0160	0 101	0 1 051	0 2000	¢ 21 510
Earnings after income tax	\$ 3,905	\$10,597	\$ 1,348	\$ 2,168	\$ 381	\$ 1,051	\$ 2,060	\$ 21,510
Earnings of equity companies included	505	2 225		240	10	100	(100)	4 272
above	525	3,335					(188)	4,373
Sales and other operating revenue (1)	5,942	15,388	56,373				23	237,054
Intersegment revenue	5,479	15,782				3,237	310	
Depreciation and depletion expense	1,571	4,072	601	1,548	410	368	477	9,047
Interest revenue	-					-	229	229
Interest expense	17	17				-	138	207
Income taxes	2,175	7,237	757	795		325	(350)	11,006
Additions to property, plant and equipment	1,701	7,529		1,416		186	555	12,859
Investments in equity companies	1,266							9,545
Total assets	19,196	56,237	14,436	46,060	7,722	11,786	18,841	174,278
Geographic								
Sales and other operating revenue (1)						2005	2004	2003
Chair d Control							illions of doll	
United States							\$ 88,382	
Non-U.S.						248,402		
Total						\$358,955	\$291,252	\$237,054
Significant non-U.S. revenue sources includ-	e:							

Japan	\$ 28,963 \$ 25,485 \$ 22,360
Canada	28,842 21,689 17,897
United Kingdom	24,805 22,549 19,946
Germany	21,653 17,649 15,764
Italy	17,160 15,096 13,074
France	14,412 12,231 9,725

Sales and other operating revenue includes excise taxes of \$30,742 million for 2005, \$27,263 million for 2004 and \$23,855 million for 2003. Includes amounts for purchases/sales contracts with the same counterparty.

Long-lived assets	2005	2004	2003
	(m	illions of dollar	5)
United States	\$ 33,117	\$ 33,569	\$ 34,585
Non-U.S.	73,893	75,070	70,380
Total	\$107,010	\$108,639	\$104,965
Significant non-U.S. long-lived assets include:		0 20. 7	
Canada	\$ 12,273	\$ 11,806	\$ 10,849
United Kingdom	7,757	9,545	9,615
Norway	6,472	7,561	7,047
Nigeria	6,409	4,923	3,833
Japan	4,016	4,784	4,931
Angola	3,803	3,544	2,666
Singapore	2,968	3,089	3,252

Index to Financial Statements

17. Income, Excise and Other Taxes

		2005			2004		2003				
	U.S.	Non-U.S.	Total	U.S.	Non-U.S.	Total	U.S.	Non-U.S.	Total		
¥2 0 (4 t 3 5)				(mill.	ions of dolla	rs)					
Income taxes											
Federal or non-U.S.											
Current	\$ 5,462	\$17,052	\$22,514	\$ 4,410	\$12,030	\$16,440	\$ 1,522	\$ 7,426	\$ 8,948		
Deferred – net	(584)	362	(222)	(1,113)	122	(991)	996	645	1,641		
U.S. tax on non-U.S. operations	208		208	. 56		56	71		71		
	5,086	17,414	22,500	3,353	12,152	15,505	2,589	8,071	10,660		
State	802		802	406		406	346		346		
Total income taxes	5,888	17,414	23,302	3,759	12,152	15,911	2,935	8,071	11,006		
Excise taxes	7,072	23,670	30,742	6,833	20,430	27,263	6,323	17,532	23,855		
All other taxes and duties											
Other taxes and duties	51	41,503	41,554	26	40,928	40,954	22	37,623	37,645		
Included in production and			1								
manufacturing expenses	1.182	1,075	2,257	982	951	1,933	976	812	1,788		
Included in SG&A expenses	202	558	760	215	503	718	211	463	674		
Total other taxes and duties	1,435	43,136	44,571	1,223	42,382	43,605	1,209	38,898	40,107		
Total	\$14,395		\$98,615	\$11,815	\$74,964	\$86,779	\$10,467	\$64,501	\$74,968		

All other taxes and duties include taxes reported in production and manufacturing and selling, general and administrative (SG&A) expenses. The above provisions for deferred income taxes include net (charges)/credits for the effect of changes in tax laws and rates of \$199 million in 2005, \$318 million in 2004, and \$124 million in 2003. Income taxes (charged)/credited directly to shareholders' equity were:

	2005	2004	2003
No. 1 and the Control of the Control	(mi	llions of dolla	ars)
Cumulative foreign exchange translation adjustment	\$158	\$(180)	\$(233)
Minimum pension liability adjustment	(90)	(49)	(381)
Gains and losses on stock investments	236	53	(331)
Other components of shareholders' equity	224	183	107

The reconciliation between income tax expense and a theoretical U.S. tax computed by applying a rate of 35 percent for 2005, 2004 and 2003, is as follows:

		2004 illions of dollars)	2003
Earnings before federal and non-U.S. income taxes	(200	anona by woman sy	
United States	\$16,098	\$11,067	\$ 9,438
Non-U.S.	42,532	29,768	22,182
Total	\$58,630	\$40,835	\$31,620
Theoretical tax	\$20,521	\$14,292	\$11,067
Effect of equity method accounting	(2,654)	(1,736)	(1,531)
Non-U.S. taxes in excess of theoretical U.S. tax	4,719	3,093	1,635
U.S. tax on non-U.S. operations	208	56	71
U.S. tax settlement		_	(541)
Other U.S.	(294)	(200)	(41)
Federal and non-U.S. income tax expense	\$22,500	\$15,505	\$10,660
Total effective tax rate	41.4%	40.3%	36.4%

The effective income tax rate includes state income taxes and the Corporation's share of income taxes of equity companies. Equity company taxes totaled \$2,226 million in 2005, \$1,180 million in 2004, and \$983 million in 2003, primarily outside the U.S.

Deferred income taxes reflect the impact of temporary differences between the amount of assets and liabilities recognized for financial reporting purposes and such amounts recognized for tax purposes.

Deferred tax liabilities/(assets) are comprised of the following at December 31:

Tax effects of temporary differences for:	2005 (millions o	2004
Depreciation	\$17,000	\$16,732
Intangible development costs	4,809	4,733
Capitalized interest	2,311	2,279
Other liabilities	2,457	3,295
Total deferred tax liabilities	\$26,577	\$27,039
Pension and other postretirement benefits	\$ (2,654)	\$ (2,613)
Tax loss carryforwards	(1,996)	(2,399)
Other assets	(5,091)	(3,761)
Total deferred tax assets	\$ (9,741)	\$ (8,773)
Asset valuation allowances	566	686
Net deferred tax liabilities	\$17,402	\$18,952

Deferred income tax (assets) and liabilities are included in the balance sheet as shown below. Deferred income tax (assets) and liabilities are classified as current or long term consistent with the classification of the related temporary difference — separately by tax jurisdiction.

Balance sheet classification	2005	2004
***************************************	(millions o	f dollars)
Prepaid taxes and expenses	\$ (2,081)	\$ (1,221)
Other assets, including intangibles, net	(1,540)	(1,406)
Accounts payable and accrued liabilities	145	487
Deferred income tax liabilities	20,878	21,092
Net deferred tax liabilities	\$17,402	\$18,952

The Corporation had \$41 billion of indefinitely reinvested, undistributed earnings from subsidiary companies outside the U.S. Unrecognized deferred taxes on remittance of these funds are not expected to be material.

Index to Financial Statements

SUPPLEMENTAL INFORMATION ON OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES (unaudited)

The results of operations for producing activities shown below are presented in accordance with Statement of Financial Accounting Standards No. 69. As such, it does not include earnings from other activities that ExxonMobil includes in the Upstream function such as oil and gas transportation operations, tar sands operations, LNG liquefaction and transportation operations, coal and power operations, technical services agreements, other nonoperating activities and adjustments for minority interests. These excluded amounts for both consolidated and equity companies totaled \$3,546 million in 2005, \$1,340 million in 2004 and \$2,300 million in 2003.

Results of Operations	Un	ited States	Canada	Europe	Africa	Mi	a Pacific/ ddle East	Russia/ Caspian	Other	Total
2005 - Revenue					(millions of	аона	rsj			
Sales to third parties	\$	4,842	\$3,216	\$ 8,383	\$ 40	\$	2,357	\$ 357	\$512	\$19,707
Transfers		6,277	3,400	7,040	12,293		3,143	279	182	32,614
	\$	11,119	\$6,616	\$15,423	\$12,333	\$	5,500	\$ 636	\$694	\$52,321
Production costs excluding taxes		1,367	1,265	2,174	840	ň	567	123	105	6,441
Exploration expenses		158	36	64	310		122	164	101	955
Depreciation and depletion		1,181	983	2,133	1,319		666	137	58	6,477
Taxes other than income		738	53	690	1,158		839	2	3	3,483
Related income tax		3,138	1,482	6,572	5,143		1,313	111	159	17,918
Results of producing activities for consolidated subsidiaries	\$	4,537	\$2,797	\$ 3,790	\$ 3,563	\$	1,993	\$ 99	\$268	\$17,047
Proportional interest in results of	-					-				
producing activities of equity										
companies	\$	1,043	\$ -	\$ 1,003	s -	\$	1,009	\$ 701	\$-	\$ 3,756
2004 - Revenue			_		_				_	
Sales to third parties	S	4,203	\$2,460	\$ 6,714	\$ 29	\$	2,291	\$ 74	\$480	\$16,251
Transfers	7	5,555	2,680	5,347	7,272	ď.,	2,770	157	22	23,803
	- \$	9,758	\$5,140	\$12,061	\$ 7,301	S	5,061	\$ 231	\$502	\$40,054
Production costs excluding taxes		1,442	1,085	1,932	719		643	102	82	6,005
Exploration expenses		193	92	112	321		104	188	76	1,086
Depreciation and depletion		1,335	969	2,082	839		702	35	60	6,022
Taxes other than income		550	49	582	722		634	_	3	2,540
Related income tax		2,546	1,015	4,417	2,789		1,103	2	97	11,969
Results of producing activities for consolidated subsidiaries	\$	3,692	\$1,930	\$ 2,936	\$ 1,911	\$	1,875	\$ (96)	\$184	\$12,432
Proportional interest in results of	-		-	2		-			_	
producing activities of equity										
companies	\$	810	\$ -	\$ 993	s -	S	635	\$ 465	S-	\$ 2,903
2003 - Revenue	-		_		_	=		-		¥ -4,1: > 1
Sales to third parties	\$	4,257	\$2,221	\$ 5,267	\$ 56	S	2,368	\$ 31	\$347	\$14,547
Transfers	ф	4,619	2,090	4,397	4,443		2,211	144	17	17,921
Transiers	S	8,876	\$4,311	\$ 9,664	\$ 4,499	\$	4,579	\$ 175	\$364	\$32,468
Production costs excluding taxes	Ф	1,435	1,054	1,688	564	'D	594	79	79	5,493
Exploration expenses		257	92	144	217		152	92	54	1,008
Depreciation and depletion		1,456	782	1,833	459		770	33	62	5,395
Taxes other than income		540	39	658	528		448	33	3	2,216
Related income tax		2,017	738	2,902	1,496		1,090	- 11	39	8,293
Results of producing activities for		2,017				-	1,070			
consolidated subsidiaries	\$	3,171	\$1,606	\$ 2,439	\$ 1,235	\$	1,525	\$ (40)	\$127	\$10,063
Proportional interest in results of										

Index to Financial Statements

Average sales prices have been calculated by using sales quantities from the Corporation's own production as the divisor. Average production costs have been computed by using net production quantities for the divisor. The volumes of crude oil and natural gas liquids (NGL) production used for this computation are shown in the reserves table on page 81 of this report. The volumes for natural gas used for this calculation are the production volumes of natural gas available for sale and thus are different than those shown in the reserves table on page 82 of this report due to volumes consumed or flared. The volumes of natural gas were converted to oil-equivalent barrels based on a conversion factor of six thousand cubic feet per barrel.

Average sales prices and production costs per unit of production – consolidated subsidiaries	United States	Canada	Europe	Africa	0.775	a Pacific/ ddle East	Russia/ Caspian	Other	Total
During 2005	-			-	_		-	-	-
Average sales prices									
Crude oil and NGL, per barrel	\$46.11	\$38.38	\$50.32	\$51.21	\$	52.89	\$51.65	\$40.67	\$48.23
Natural gas, per thousand cubic feet	7.30	7.43	5.64			4.16	1.35	1.20	5.96
Average production costs, per barrel (1)	5.56	7.76	5.95	3.46		3.85	9.49	4.54	5.36
During 2004									
Average sales prices									
Crude oil and NGL, per barrel	\$34.84	\$30.26	\$35.71	\$35.04	\$	39.04	\$34.99	\$26.89	\$34.76
Natural gas, per thousand cubic feet	5.53	5.23	4.20			3.41	-	1.13	4.48
Average production costs, per barrel (1)	5.05	6.47	4.95	3.44		3.72	16.62	3.23	4.78
During 2003									
Average sales prices									
Crude oil and NGL, per barrel	\$25.74	\$23.84	\$27.15	\$28.29	\$	29.01	\$27.81	\$20,47	\$26.66
Natural gas, per thousand cubic feet	5.06	4.61	3.76	_		2.84		1.04	3.98
Average production costs, per barrel (1)	4.48	6.17	4.34	3.49		2.91	12.80	3.41	4.31

⁽i) Production costs exclude depreciation and depletion and all taxes. Natural gas included by conversion to crude oilequivalent.

Index to Financial Statements

SUPPLEMENTAL INFORMATION ON OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES (unaudited)

Oil and Gas Exploration and Production Costs

The amounts shown for net capitalized costs of consolidated subsidiaries are \$5,541 million less at year-end 2005 and \$4,769 million less at year-end 2004 than the amounts reported as investments in property, plant and equipment for the Upstream in note 8, page 60. This is due to the exclusion from capitalized costs of certain transportation and research assets and assets relating to the tar sands and LNG operations, all as required in Statement of Financial Accounting Standards No. 19.

Capitalized Costs	United States	Canada	Europe	Africa	Asia Pacific/ Middle East	Russia/ Caspian	Other	Total
As of December 31, 2005				(millions	of dollars)			
Property (acreage) costs – Proved – Unproved	\$ 3,407 587	\$ 3,336 266	\$ 210 29	\$ 184 544	\$ 954 858	\$ 460 99	\$ 209 227	\$ 8,760 2,610
Total property costs	\$ 3,994	\$ 3,602	\$ 239	\$ 728	\$ 1,812	\$ 559	\$ 436	\$ 11,370
Producing assets	34,306	11,261	39,355	11,818	15,024	857	1,006	113,627
Support facilities	620	199	478	410	1,158	217	51	3,133
Incomplete construction	1,862	789	1,073	4,903	751	3,109	154	12,641
Total capitalized costs Accumulated depreciation and	\$40,782	\$15,851	\$41,145	\$17,859	\$ 18,745	\$4,742	\$1,647	\$140,771
depletion	26,071	9,573	28,899	5,115	13,070	330	437	83,495
Net capitalized costs for consolidated subsidiaries	\$14,711	\$ 6,278	\$12,246		\$ 5,675	\$4,412	\$1,210	\$ 57,276
Proportional interest of net capitalized costs of equity companies	\$ 1,386		\$ 1,310		\$ 1,043	\$2,746		\$ 6,485
As of December 31, 2004								
Property (acreage) costs – Proved – Unproved	\$ 3,739 623	\$ 3,414 244	\$ 235 35	\$ 253 552	\$ 998 855	\$ 314 118	\$ 209 216	\$ 9,162 2,643
Total property costs	\$ 4,362	\$ 3,658	\$ 270	\$ 805	\$ 1,853	\$ 432	\$ 425	\$ 11,805
Producing assets	34,875	11,318	43,899	8,537	15,025	231	1.001	114,886
Support facilities	617	119	530	383	1,081	93	44	2,867
Incomplete construction	1,637	419	1,136	4,782	897	2,346	173	11,390
Total capitalized costs Accumulated depreciation and	\$41,491	\$15,514	\$45,835	\$14,507	\$ 18,856	\$3,102	\$1,643	\$140,948
depletion	26,508	8,905	30,943	3,801	12,948	193	406	83,704
Net capitalized costs for consolidated subsidiaries	\$14,983	\$ 6,609	\$14,892		\$ 5,908	\$2,909	\$1,237	\$ 57,244
Proportional interest of net capitalized costs of equity								
companies	\$ 1,234	<u>s — </u>	\$ 1,277	<u>\$</u> _	\$ 767	\$2,427	<u>\$ —</u>	\$ 5,705

Index to Financial Statements

Oil and Gas Exploration and Production Costs (continued)

The amounts reported as costs incurred include both capitalized costs and costs charged to expense during the year. Costs incurred also include new asset retirement obligations established in the current year, as well as increases or decreases to the asset retirement obligation resulting from changes in cost estimates or abandonment date. Total consolidated costs incurred in 2005 were \$10,784 million, up \$1,767 million from 2004, due primarily to higher development and property acquisition costs. 2004 costs were \$9,017 million, down \$819 million from 2003, due primarily to lower development costs.

Costs incurred in property acquisitions, exploration and development activities	United States	Canada	Europe	Africa (million	Mid	Pacific/ dle East ollars)	Russia/ Caspian	Other	Total
During 2005							51 650	5	2.00
Property acquisition costs - Proved	\$ -	\$ —	\$ —	\$ —	\$	1	\$ 174	\$-	\$ 174
- Unproved	11	6	_	53		41	156	12	279
Exploration costs	286	62	133	507		171	159	59	1,377
Development costs	1,426	624	1,302	3,189	_	541	1,774	98	8,954
Total costs incurred for consolidated	100								
subsidiaries	\$1,723	\$ 692	\$1,435	\$3,749	\$	753	\$2,263	\$169	\$10,784
Proportional interest of costs incurred of equity		_	_			_	_		
companies	\$ 269	s -	\$ 210	\$ -	\$	319	\$ 384	\$-	\$ 1,182
During 2004				_	-			_	
Property acquisition costs – Proved	¢ _	s —	e	\$ 68	\$	1-0	\$ 25	s —	\$ 93
- Unproved	14	1		24	Ф	2	W 23		41
Exploration costs	232	68	123	382		110	189	86	1,190
Development costs	1,427	694	1,232	2,788		494	985	73	7,693
Total costs incurred for consolidated	-14.127		1,000	2,700	_				
subsidiaries	\$1,673	\$ 763	\$1,355	\$3,262	\$	606	\$1,199	\$159	\$ 9,017
	91,075	4 103	\$1,555	\$3,202	Φ.		91,177	9133	\$ 2,017
Proportional interest of costs incurred of equity	A 155				m.	205	0 451	•	0 000
companies	\$ 155	<u>s —</u>	\$ 169	2 -	3	205	\$ 451	<u>\$-</u>	\$ 980
During 2003									
Property acquisition costs - Proved	\$ -	s —	s —	\$ -	\$	-	\$ -	S —	s —
- Unproved	17	7	4	17		_	-	-	45
Exploration costs	252	102	153	264		144	170	67	1,152
Development costs	1,636	644	1,755	3,117		731	729	27	8,639
Total costs incurred for consolidated		-							
subsidiaries	\$1,905	\$ 753	\$1,912	\$3,398	\$	875	\$ 899	\$ 94	\$ 9,836
Proportional interest of costs incurred of equity					_				
companies	\$ 145	<u>s —</u>	\$ 231	<u>s —</u>	\$	146	\$ 289	<u>\$-</u>	<u>\$ 811</u>

Index to Financial Statements

SUPPLEMENTAL INFORMATION ON OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES (unaudited)

Oil and Gas Reserves

The following information describes changes during the years and balances of proved oil and gas reserves at year-end 2003, 2004 and 2005.

The definitions used are in accordance with the Securities and Exchange Commission's Rule 4-10(a) of Regulation S-X, paragraphs (2) through (2)iii, (3) and (4).

Proved oil and gas reserves are the estimated quantities of crude oil, natural gas and natural gas liquids that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions, i.e., prices and costs as of the date the estimate is made. Prices include consideration of changes in existing prices provided only by contractual arrangements but not on escalations based upon future conditions. In some cases, substantial new investments in additional wells and related facilities will be required to recover these proved reserves.

Based on regulatory guidance, the Corporation began reporting proved reserves in 2004 on the basis of December 31 prices and costs ("year-end prices").

The use of year-end prices for reserves estimation introduces short-term price volatility into the process since annual adjustments are required based on prices occurring on a single day. The Corporation believes that this approach is inconsistent with the long-term nature of the upstream business where production from individual projects often spans multiple decades. The use of prices from a single date is not relevant to the investment decisions made by the Corporation and annual variations in reserves based on such year-end prices are not of consequence to how the business is actually managed.

Revisions can include upward or downward changes in previously estimated volumes of proved reserves for existing fields due to the evaluation or re-evaluation of (1) already available geologic, reservoir or production data or (2) new geologic, reservoir or production data, or (3) changes to underlying price assumptions used in the determination of reserves. This category can also include changes associated with the performance of improved recovery projects and significant changes in either development strategy or production equipment/facility capacity.

Proved reserves include 100 percent of each majority-owned affiliate's participation in proved reserves and ExxonMobil's ownership percentage of the proved reserves of equity companies, but exclude royalties and quantities due others. Gas reserves exclude the gaseous equivalent of liquids expected to be removed from the gas on leases, at field facilities and at gas processing plants. These liquids are included in net proved reserves of crude oil and natural gas liquids.

In the reserves tables on pages 81 to 83, consolidated reserves and equity reserves are reported separately. However, the Corporation does not view equity reserves any differently than those from consolidated companies.

Reserves reported under production sharing and other nonconcessionary agreements are based on the economic interest as defined by the specific fiscal terms in the agreement. The percentage of conventional liquids and natural gas proved reserves (consolidated subsidiaries plus equity companies) at year-end 2005 that were associated with production sharing contract arrangements was 17 percent of liquids, 10 percent of natural gas and 13 percent on an oil-equivalent basis (gas converted to oil-equivalent at 6 billion cubic feet = 1 million barrels).

Net proved developed reserves are those volumes that are expected to be recovered through existing wells with existing equipment and operating methods. Undeveloped reserves are those volumes that are expected to be recovered as a result of future investments to drill new wells, to recomplete existing wells and/or to install facilities to collect and deliver the production from existing and future wells.

Crude oil and natural gas liquids and natural gas production quantities shown are the net volumes withdrawn from ExxonMobil's oil and gas reserves. The natural gas quantities differ from the quantities of gas delivered for sale by the producing function as reported on page 86 due to volumes consumed or flared and inventory changes.

Table of Contents

Index to Financial Statements

Crude Oil and Natural Gas Liquids	United States	Canada (1)	Europe	Africa (millions	Asia Pacific/ Middle East of barrels)	Russia/ Caspian	Other	Total
Net proved developed and undeveloped reserves				(minons)	y ourreis,			
of consolidated subsidiaries								
January 1, 2003	2,909	1,285	1,333	2,626	592	353	527	9,625
Revisions	31	14	50	176	68	-	2	341
Purchases	1	-3.	-	-	-	-	$\overline{}$	1
Sales	(14)		(2)	-	-	-	-	(16)
Improved recovery	16	3	1	66	-	-	_	86
Extensions and discoveries	27	6	10	36	49	503	9256	631
Production	(178)	(114)	(208)	(162)	(94)	(6)	(17)	(779)
December 31, 2003	2,792	1,194	1,184	2,742	615	850	512	9,889
Revisions	(46)	4	35	(39)	7	97	(14)	44
Purchases	-		-	10	-	-	-	10
Sales	(113)	(3)	_	-	(16)	-	-	(132)
Improved recovery	5	_	-	-	_	-	-	5
Extensions and discoveries	15	4	3	150	2	_	_	174
Production	(161)	(108)	(210)	(209)	(81)	(6)	(20)	(795)
Total before 2004 year-end								
price/cost revisions	2,492	1,091	1,012	2,654	527	941	478	9,195
Year-end price/cost revisions	101	(464)	2	(210)	(12)	(217)		(800)
December 31, 2004	2,593	627	1,014	2,444	515	724	478	8,395
Remove 2004 year-end price/cost								
revisions	(101)	464	(2)	210	12	217	_	800
Total before 2004 year-end				-				
price/cost revisions	2,492	1,091	1,012	2,654	527	941	478	9,195
Revisions	(235)		11	(53)		(96)	(2)	(267)
Purchases	100-7		_	-	-	113		113
Sales	(96)	(42)	(1)	_	(11)		(7)	(227)
Improved recovery	2	() = A	3		-	- 37.56	-0.0	5
Extensions and discoveries	6	19	47	170	-	-	-	242
Production	(136)	(107)	(197)	(244)	(67)	(13)	(18)	(782)
Total before 2005 year-end								
price/cost revisions	2,033	963	875	2,527	555	875	451	8,279
Year-end price/cost revisions	80	(131)	8	(215)	(40)	(168)		(466)
December 31, 2005	2,113	832	883	2,312	515	707	451	7,813
	2,113	- 032		2,012				7,015
Proportional interest in proved reserves of equity companies					har			-
End of year 2003	426		20	-	767	973	-	2,186
End of year 2004 (2)	402	-	17	-	1,169	911	-	2,499
End of year 2005 (2)	413		11	_	1,381	873	_	2,678
Proved developed reserves, included above, as of December 31, 2003	T							
Consolidated subsidiaries	2,348	750	805	1,107	489	33	132	5,664
Equity companies	363	2	16	_	616	513		1,508
Proved developed reserves, included above, as of December 31, 2004								
Consolidated subsidiaries	2,204	561	763	1,117	403	34	129	5,211
Equity companies	347		15	-	642	600	_	1,604
Proved developed reserves, included above, as of December 31, 2005	1207		-					1,000
Consolidated subsidiaries	1,680	607	656	1,218	464	55	227	4,907

- (1) Includes total proved reserves attributable to Imperial Oil Limited of 889 million barrels in 2003, 347 million barrels in 2004 and 634 million barrels in 2005, as well as proved developed reserves of 519 million barrels in 2003, 343 million barrels in 2004 and 449 million barrels in 2005, in which there is a 30.4 percent minority interest.
- (2) Year-end equity company total reserves of 2,499 million barrels in 2004 and 2,678 million barrels in 2005 included a negative revision of 62 million barrels in 2004 and no revisions in 2005 due to the use of year-end prices and costs.

Index to Financial Statements

SUPPLEMENTAL INFORMATION ON OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES (unaudited)

Oil and Gas Reserves (continued)

Natural Gas	United States	Canada (1)	Europe	Africa billions of	Asia Pacific/ Middle East cubic feet)	Russia/ Caspian	Other	Total
Net proved developed and undeveloped			,		2000			
reserves of consolidated subsidiaries								
January 1, 2003	12,062	2,882	10,508	436	7,775	231	687	34,581
Revisions	124	(199)	411	157	19	-	(2)	510
Purchases	10	_	_	-	-	-	_	10
Sales	(90)	-	(3)		_	-	-	(93)
Improved recovery	9	1		-	-	-	-	10
Extensions and discoveries	156	45	333	1	872	238	-	1,645
Production	(999)	(388)	(1,103)	(11)	(727)		(40)	(3,268)
December 31, 2003	11,272	2,341	10,146	583	7,939	469	645	33,395
Revisions	31	19	(65)	165	(450)	47	164	(89)
Purchases		3	_	9		_		9
Sales	(142)	(18)	(16)		(301)	-	_	(477)
Improved recovery	2		31	-	_	-	_	33
Extensions and discoveries	121	36	39	39	44		-	279
Production	(846)	(399)	(1,092)	(25)	(633)	-	(40)	(3,035)
Total before 2004 year-end						_		
price/cost revisions	10,438	1,979	9,043	771	6,599	516	769	30,115
Year-end price/cost revisions	1,891	(96)	142	2	(208)	(1)		1,728
December 31, 2004	12,329	1,883	9,185	771	6,391	515	769	31,843
Remove 2004 year-end price/cost	12,527	1,005	2,103	111	0,571	010	102	31,013
revisions	(1,891)	96	(142)	=	208	1	_	(1,728)
Total before 2004 year-end	(1,051)		(112)	_		-		(1,120)
price/cost revisions	10,438	1,979	9,043	771	6,599	516	769	30,115
Revisions	1,369	128	221	35	1,879	(8)	(112)	3,512
Purchases	1,509	120	221	23	1,075	53	(112)	53
Sales	(105)	(23)	(73)			(26)	(2)	(229)
Improved recovery	(105)	(23)	(13)			(20)	(2)	(223)
Extensions and discoveries	288	27	116	57	33	315		836
Production	(764)	(376)	(1,072)	(22)	(546)	(3)	(36)	(2,819)
	(/04)	(3/0)	(1,0/2)	_(22)	(340)	_(3)	(30)	(2,619)
Total before 2005 year-end	11 226	1 775	0 225	0.41	7.065	0.47	610	21 460
price/cost revisions	11,226	1,735	8,235	841	7,965	847	619	31,468
Year-end price/cost revisions	2,466	(30)	163	-	(686)	(26)	-	1,887
December 31, 2005	13,692	1,705	8,398	841	7,279	821	619	33,355
Proportional interest in proved reserves of equity companies								
End of year 2003	152	-	13,703	-	6,055	1,464	-	21,374
End of year 2004 (2)	140	_	13,557	-	13,455	1,367		28,519
End of year 2005 (2)	136		13,024	_	19,119	1,273	-	33,552

⁽¹⁾ Includes total proved reserves attributable to Imperial Oil Limited of 1,023 billion cubic feet in 2003, 791 billion cubic feet in 2004 and 747 billion cubic feet in 2005, in which there is a 30.4 percent minority interest.

⁽²⁾ Year-end equity company total reserves of 28,519 billion cubic feet in 2004 and 33,552 billion cubic feet in 2005 included a positive revision of 694 billion cubic feet in 2004 and a positive revision of 1,053 billion cubic feet in 2005 due to the use of year-end prices and costs.

Index to Financial Statements

Natural Gas (continued)	United States	Canada (1)	Europe	Africa	Asia Pacific/ Middle East	Russia/ Caspian	Other	Total
			a	hillions of	cubic feet)			
Proved developed reserves, included above, as of								
December 31, 2003								
Consolidated subsidiaries	9,513	1,962	7,196	155	5,785	3	328	24,942
Equity companies	124	-	7,770	-	2,689	709	-	11,292
Proved developed reserves, included above, as of					13.17			
December 31, 2004								
Consolidated subsidiaries	9,134	1,647	7,076	279	4,440	4	279	22,859
Equity companies	120		9,805		4,578	837	_	15,340
Proved developed reserves, included above, as of			. 66.55		30.0			
December 31, 2005								
Consolidated subsidiaries	10.386	1,527	6.332	376	6,067	227	313	25,228
Equity companies	113	_	10,226	_	7,276	835	_	18,450

⁽i) Includes proved developed reserves attributable to Imperial Oil Limited of 859 billion cubic feet in 2003, 704 billion cubic feet in 2004 and 643 billion cubic feet in 2005, in which there is a 30.4 percent minority interest.

INFORMATION ON CANADIAN TAR SANDS PROVEN RESERVES NOT INCLUDED ABOVE

In addition to conventional liquids and natural gas proved reserves, ExxonMobil has significant interests in proven tar sands reserves in Canada associated with the Syncrude project. For internal management purposes, ExxonMobil views these reserves and their development as an integral part of total upstream operations. However, for financial reporting purposes, these reserves are required to be reported separately from the oil and gas reserves.

The tar sands reserves are not considered in the standardized measure of discounted future cash flows for conventional oil and gas reserves, which is found on page 84,

Tar Sands Reserves	Canada
A 10 TO 10 T	(millions of barrels)
At December 31, 2003	781
At December 31, 2004	757
At December 31, 2005	738

Index to Financial Statements

SUPPLEMENTAL INFORMATION ON OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES (unaudited)

Standardized Measure of Discounted Future Cash Flows

As required by the Financial Accounting Standards Board, the standardized measure of discounted future net cash flows is computed by applying year-end prices, costs and legislated tax rates and a discount factor of 10 percent to net proved reserves. The standardized measure includes costs for future dismantlement, abandonment and rehabilitation obligations. The Corporation believes the standardized measure does not provide a reliable estimate of the Corporation's expected future cash flows to be obtained from the development and production of its oil and gas properties or of the value of its proved oil and gas reserves. The standardized measure is prepared on the basis of certain prescribed assumptions including year-end prices, which represent a single point in time and therefore may cause significant variability in cash flows from year to year as prices change.

Standardized Measure of Discounted Future Cash Flows	United States	Canada (1)	Europe	Africa	Asia Pacific/ Middle East	Russia/ Caspian	Other	Total
Consolidated subsidiaries				(millions o	f dollars)			
As of December 31, 2003								
Future cash inflows from sales								
of oil and gas	\$127,459	\$ 35,637	\$ 71,937	\$ 76,969	\$ 34,597	\$21,582	\$10,346	\$378,527
Future production costs	26,777	11,451	16,090	15,017	9,479	3,450	2,400	84,664
Future development costs	4,537	3,659	6,966	7,576	2,812	4,161	630	30,341
Future income tax expenses	38,690	7,835	25,080	29,808	9,241	3,428	2,282	116,364
Future net cash flows Effect of discounting net cash	\$ 57,455		\$ 23,801	\$ 24,568	\$ 13,065	\$10,543	\$ 5,034	\$147,158
flows at 10%	31,107	4,688	7,970	10,868	4,927	7,446	3,215	70,221
Discounted future net cash								
flows	\$ 26,348	\$ 8,004	\$ 15,831	\$ 13,700	\$ 8,138	\$ 3,097	\$ 1,819	\$ 76,937
Proportional interest in standardized measure of discounted future net cash flows related to proved								
reserves of equity companies	\$ 4,007	\$ -	\$ 9,826	\$ -	\$ 4,627	\$ 3,849	s —	\$ 22,309
Consolidated subsidiaries				-				
As of December 31, 2004								
Future cash inflows from sales								
of oil and gas	\$141,261	\$ 25,008	\$ 79,698	\$ 87,687	\$ 31,795	\$25,203	\$11,708	\$402,360
Future production costs	30,096	5,686	17,847	17,929	9,499	3,465	2,035	86,557
Future development costs	6,181	2,743	7,670	7,822	2,798	4,273	593	32,080
Future income tax expenses	42,928	5,662	28,883	33,945	7,466	4,203	2,944	126,031
Future net cash flows Effect of discounting net cash	\$ 62,056	\$ 10,917	\$ 25,298	\$ 27,991	\$ 12,032	\$13,262	\$ 6,136	\$157,692
flows at 10%	36,078	3,598	8,485	11,287	4,459	8,797	3,904	76,608
Discounted future net cash								
flows	\$ 25,978	\$ 7,319	\$ 16,813	\$ 16,704	\$ 7,573	\$ 4,465	\$ 2,232	\$ 81,084
Proportional interest in standardized measure of discounted future net cash flows related to proved reserves of equity companies	\$ 4,079	s —	\$ 9,612	s —	\$ 11,137	\$ 4,784	s –	\$ 29,612
Consolidated subsidiaries As of December 31, 2005 Future cash inflows from sales								

of oil and gas	\$200,119	\$ 37,309	\$107,127	\$127,584	\$	44,411	\$35,757	\$17,644	\$569,951
Future production costs	34,100	12,343	19,958	21,856		12,515	5,324	2,117	108,213
Future development costs	8,935	2,782	8,552	12,464		2,651	4,000	780	40,164
Future income tax expenses	67,581	7,606	47,999	51,610	€.	13,151	6,608	4,737	199,292
Future net cash flows	\$ 89,503	\$ 14,578	\$ 30,618	\$ 41,654	\$	16,094	\$19,825	\$10,010	\$222,282
Effect of discounting net cash flows at 10%	53,919	4,136	9,988	15,337		6,800	12,379	6,505	109,064
Discounted future net cash flows	\$ 35,584	\$ 10,442	\$ 20,630	\$ 26,317	\$	9,294	\$ 7,446	\$ 3,505	\$113,218
Proportional interest in standardized measure of discounted future net cash flows related to proved									
reserves of equity companies	\$ 7,000	<u>s — </u>	\$ 11,043	<u>s</u> _	\$	25,311	\$ 7,735	<u>s — </u>	\$ 51,089

Includes discounted future net cash flows attributable to Imperial Oil Limited of \$3,667 million in 2003, \$2,773 million in 2004 and \$3,723 million in 2005, in which there is a 30.4 percent minority interest.

Index to Financial Statements

Change in Standardized Measure of Discounted Future Net Cash Flows Relating to Proved Oil and Gas Reserves

Consolidated Subsidiaries	2005	2004 nillions of dollars	2003
Value of reserves added during the year due to extensions, discoveries, improved recovery and net purchases less related costs	\$ 4,619	\$ 588	\$ 4,431
Changes in value of previous-year reserves due to: Sales and transfers of oil and gas produced during the year, net of production	100 1478	Alvain.	44 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
(lifting) costs	(42,606)	(31,726)	(25,012)
Development costs incurred during the year	8,617	7,660	8,350
Net change in prices, lifting and development costs	85,049	21,267	4,014
Revisions of previous reserves estimates	9,050	(766)	2,234
Accretion of discount	9,021	10,645	10,513
Net change in income taxes	(41,616)	(3,521)	(2,975)
Total change in the standardized measure during the year	\$ 32,134	\$ 4,147	\$ 1,555

Index to Financial Statements

OPERATING SUMMARY (unaudited)

	2005	2004	2003	2002	2001
Production of crude oil and natural gas liquids		(thousan	ds of barre	ds daily)	
Net production					
United States	477	557	610	681	712
Canada	346	355	363	349	331
Europe	546	583	579	592	653
Africa	666	572	442	349	342
Asia Pacific/Middle East	332	360	386	387	382
Russia/Caspian	107	91	88	91	86
Other Non-U.S.	49	53	48	47	36
Worldwide	2,523	2,571	2,516	2,496	2,542
Natural and an deading and 1.11. Const.		(millions	of cubic fe	eet daily)	
Natural gas production available for sale Net production					
United States	1,739	1,947	2,246	2,375	2,598
Canada	918	972	943	1,024	1,006
Europe	4,315	4,614	4,498	4,463	4,595
Asia Pacific/Middle East	2,114	2,161	2,258	2,427	1,901
Russia/Caspian	77	73	73	77	65
Other Non-U.S.	88	97	101	86	114
Worldwide	9,251	9,864	10,119	10,452	10,279
	(thou	sands of oi			taily)
Oil-equivalent production (1)	4,065	4,215	4,203	4,238	4,255
Refinery throughput		(thousan	ds of barre	els daily)	
United States	1,794	1,850	1,806	1,834	1,811
Canada	466	468	450	447	449
Europe	1,672	1,663	1,566	1,539	1,563
Asia Pacific	1,490	1,423	1,390	1,379	1,436
Other Non-U.S.	301	309	298	244	283
Worldwide	5,723	5,713	5,510	5,443	5,542
Petroleum product sales	3,723	3,713		3,443	3,342
United States	2,915	2,872	2,729	2,731	2,751
Canada	620	615	602	593	585
Europe	2,115	2,139	2,061	2,042	2,079
Asia Pacific and other Eastern Hemisphere	2,128	2,080	2,075	1,889	2,024
Latin America	479	504	490	502	532
Worldwide	8,257	8,210	7,957	7,757	7,971
Gasoline, naphthas	3,274	3 201	3,238	3,176	3,165
Heating oils, kerosene, diesel oils	2,560		2,432		
Aviation fuels	700				2,389
Heavy fuels	711	659		604	721 668
Specialty petroleum products			- A 154	994	
	1,012				1,028
Worldwide	8,257				7,971
Chemical prime product sales		(thousa	nds of met	ric tons)	
United States	10,369	11,521	10,740	11,386	11,078

Non-U.S.

Worldwide

 $\frac{16,408}{26,777} \, \frac{16,267}{27,788} \, \frac{15,827}{26,567} \, \frac{15,220}{26,606} \, \frac{14,702}{25,780}$

Operating statistics include 100 percent of operations of majority-owned subsidiaries; for other companies, crude production, gas, petroleum product and chemical prime product sales include ExxonMobil's ownership percentage, and refining throughput includes quantities processed for ExxonMobil. Net production excludes royalties and quantities due others when produced, whether payment is made in kind or cash.

(1) Gas converted to oil-equivalent at 6 million cubic feet = 1 thousand barrels.

Index to Financial Statements

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

EXXON MOBIL CORPORATION

By: /s/ REX W. TILLERSON

(Rex W. Tillerson,
Chairman of the Board)

Dated February 28, 2006

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints William M. Colton, Richard E. Gutman and Robert E. Harayda, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

/s/ REX W. TILLERSON	Chairman of the Board	February 28, 2006
(Rex W. Tillerson)	- (Principal Executive Officer)	
/s/ MICHAEL J. BOSKIN	Director	February 28, 2006
(Michael J. Boskin)		
/s/ WILLIAM W. GEORGE	Director	February 28, 2006
(William W. George)		

Index to Financial Statements

/s/ JAMES R. HOUGHTON	Director	February 28, 2006
(James R. Houghton)		
/s/ WILLIAM R. HOWELL	Director	February 28, 2006
(William R. Howell)		
/s/ REATHA CLARK KING	Director	February 28, 2006
(Reatha Clark King)		
/s/ PHILIP E. LIPPINCOTT	Director	February 28, 2006
(Philip E. Lippincott)		
/s/ HENRY A. MCKINNELL, JR.	Director	February 28, 2006
(Henry A. McKinnell, Jr.)		
/s/ MARILYN CARLSON NELSON	Director	February 28, 2006
(Marilyn Carlson Nelson)		
/s/ SAMUEL J. PALMISANO	Director	February 28, 2006
(Samuel J. Palmisano)		
/s/ WALTER V. SHIPLEY	Director	February 28, 2006
(Walter V. Shipley)		
/s/ J. STEPHEN SIMON	Director	February 28, 2006
(J. Stephen Simon)		
/s/ DONALD D. HUMPHREYS	Treasurer (Principal Financial Officer)	February 28, 2006
(Donald D. Humphreys)	(Thiopar I manoisi Ottioor)	

/8/	PATRICK	T.	MULVA

(Patrick T. Mulva)

Controller (Principal Accounting Officer)

February 28, 2006

88

Index to Financial Statements

INDEX TO EXHIBITS

3(i).	Restated Certificate of Incorporation, as restated November 30, 1999, and as further amended effective June 20, 2001 (incorporated by reference to Exhibit 3(i) to the registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001).
3(ii).	By-Laws, as revised to July 31, 2002 (incorporated by reference to Exhibit 3(ii) to the registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002).
10(iii)(a.1).	2003 Incentive Program (incorporated by reference to Appendix B to the Proxy Statement of Exxon Mobil Corporation dated April 17, 2003).*
10(iii)(a.2).	Form of stock option granted to executive officers (incorporated by reference to Exhibit 10(iii)(a.2) to the registrant's Annual Report on Form 10-K for 2004).*
10(iii)(a.3).	Form of restricted stock agreement with executive officers (incorporated by reference to Exhibit 99.4 to the Registrant's Report on Form 8-K on December 1, 2005).*
10(iii)(b.1).	Short Term Incentive Program, as amended (incorporated by reference to Exhibit 10(iii)(e) to the registrant's Annual Report on Form 10-K for 2003).*
10(iii)(b.2).	Form of Earnings Bonus Unit granted to executive officers (incorporated by reference to Exhibit 99.2 to the Registrant's Report on Form 8-K on December 1, 2005).*
10(iii)(c.1).	ExxonMobil Supplemental Savings Plan (incorporated by reference to Exhibit 10(iii)(c.1) to the registrant's Annual Report on Form 10-K for 2004).*
10(iii)(c.2).	ExxonMobil Supplemental Pension Plan (incorporated by reference to Exhibit 10(iii)(c.2) to the registrant's Annual Report on Form 10-K for 2004).*
10(iii)(c.3).	ExxonMobil Additional Payments Plan (incorporated by reference to Exhibit 10(iii)(c.3) to the registrant's Annual Report on Form 10-K for 2004).*
10(iii)(d).	ExxonMobil Executive Life Insurance and Death Benefit Plan (incorporated by reference to Exhibit 10 (iii)(d) to the registrant's Annual Report on Form 10-K for 2004).*
10(iii)(e).	Agreement dated December 16, 2005, between Exxon Mobil Corporation and L. R. Raymond (incorporated by reference to Exhibit 99.1 to the registrant's Report on Form 8-K on December 16, 2005).*
10(iii)(f.1).	2004 Non-Employee Director Restricted Stock Plan (incorporated by reference to Appendix B to the Proxy Statement of Exxon Mobil Corporation dated April 14, 2004).*
10(iii)(f.2).	Standing resolution for non-employee director restricted grants dated July 28, 2004 (incorporated by reference to Exhibit 10(iii)(c.2) to the registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004).*
10(iii)(f.3).	Form of restricted stock grant letter for non-employee directors (incorporated by reference to Exhibit 99.3 to the registrant's Report on Form 8-K on January 4, 2005).*
10(iii)(f.4).	Standing resolution for non-employee director cash fees dated September 27, 2000 (incorporated by reference to Exhibit 10(iii)(f.1) to the registrant's Annual Report on Form 10-K for 2004).*

Index to Financial Statements

INDEX TO EXHIBITS—(continued)

10(iii)(f.5).	2001 Nonemployee Directors' Deferred Compensation Plan.*
10(iii)(g.1).	1995 Mobil Incentive Compensation and Stock Ownership Plan.*
10(iii)(g.2).	Form of stock option granted to Mobil executive officers (incorporated by reference to Exhibit 10(iii)(g.2) to the registrant's Annual Report on Form 10-K for 2004).*
12.	Computation of ratio of earnings to fixed charges.
14.	Code of Ethics and Business Conduct (incorporated by reference to Exhibit 14 to the registrant's Annual Report on Form 10-K for 2003).
21.	Subsidiaries of the registrant.
23.	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.
31.1	Certification (pursuant to Securities Exchange Act Rule 13a-14(a)) by Chief Executive Officer.
31.2	Certification (pursuant to Securities Exchange Act Rule 13a-14(a)) by Principal Financial Officer.
31.3	Certification (pursuant to Securities Exchange Act Rule 13a-14(a)) by Principal Accounting Officer.
32.1	Section 1350 Certification (pursuant to Sarbanes-Oxley Section 906) by Chief Executive Officer.
32.2	Section 1350 Certification (pursuant to Sarbanes-Oxley Section 906) by Principal Financial Officer.
32.3	Section 1350 Certification (pursuant to Sarbanes-Oxley Section 906) by Principal Accounting Officer.

^{*} Compensatory plan or arrangement required to be identified pursuant to Item 15(a)(3) of this Annual Report on Form 10-K.

The registrant has not filed with this report copies of the instruments defining the rights of holders of long-term debt of the registrant and its subsidiaries for which consolidated or unconsolidated financial statements are required to be filed. The registrant agrees to furnish a copy of any such instrument to the Securities and Exchange Commission upon request.



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Exxon Mobil Reports \$39.5B Annual Profit

Updated 8:26 AM ET February 1, 2007

NEW YORK (AP) - Oil giant Exxon Mobil Corp. on Thursday posted the largest annual profit by a U.S. company _ \$39.5 billion _ even as earnings for the last quarter of 2006 declined 4 percent.

The 2006 profit topped the previous record of \$36.13 billion which Exxon set in 2005.

Revenue at the world's largest publicly traded oil company rose to \$377.64 billion for the year, surpassing the record \$370.68 billion that Exxon posted in 2005.

Exxon Mobil's record annual earnings followed a year of extraordinarily high energy prices as crude oil topped \$78 a barrel in the summer _ driving up average gasoline prices in the United States to more than \$3 a gallon. Prices retreated later in the year.

The fourth-quarter decline reflects lower profits from Exxon's refining and marketing segment and a sharp dropoff in natural gas prices.

Profit for the fourth quarter of 2006 declined to \$10.25 billion from \$10.71 billion Exxon earned in the 2005 quarter _ a record quarterly profit for any U.S. public company.

Per-share earnings rose to \$1.76 from \$1.71 as the company reduced the number of shares outstanding.

For the year, Exxon earned \$6.62 per share in 2006 versus \$5.71 per share in 2005.

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Goods and Services

(ABANDONED) IC 005, US 006 018 044 046 051 052, G & S: pesticides for agricultural and domestic

use for mosquito control

Mark Drawing

Code

(1) TYPED DRAWING

Design Search

Code

Serial Number

75064330

Filing Date

February 27, 1996

Current Filing

Basis

1B

Original Filing

Basis

1B

Owner

(APPLICANT) EXXON MOBIL CORPORATION CORPORATION BY CHANGE OF NAME TEXAS 5959

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Assignment Recorded

ASSIGNMENT RECORDED

Attorney of Record

Dee Ann Weldon-Wilson

Type of Mark Register

TRADEMARK PRINCIPAL

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Date

June 2, 2000

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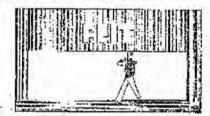
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COMMERCE: 19490301

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(3) DESIGN PLUS WORDS, LETTERS, AND/OR NUMBERS

Design Search Code

02.01.24 - Band uniforms (men wearing); Cavalrymen; Men, soldiers, cavalrymen, men in military uniform,

including men dressed in band uniforms with a military appearance; Military men; Soldiers

26.11.02 - Plain single line rectangles; Rectangles (single line)

26.11.20 - Rectangles inside one another

26.11.21 - Rectangles that are completely or partially shaded

Serial Number

71583646

Filing Date

August 18, 1949

Current Filing

1A

Basis

Original Filing Basis

1A

Supplemental Register Date

April 17, 1951

Registration

Number

0547638

Registration Date September 4, 1951

Owner

(REGISTRANT) ESSO STANDARD OIL COMPANY CORPORATION DELAWARE WILMINGTON

DELAWARE

Assignment Recorded

ASSIGNMENT RECORDED

Prior

BBC000011

Registrations

0180361;0201116;0201264;0219584;0222342;0222480;0251833;0289671

Description of

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Type of Mark

TRADEMARK SUPPLEMENTAL

Register Renewal

1ST RENEWAL 19710904

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Goods and Services

(EXPIRED) IC 005. US 006. G & S: INSECTICIDES, LIQUID [AND POWDER; DEODORANTS,

DISINFECTANTS,] AND INSECT REPELLENTS. FIRST USE: 19230517. FIRST USE IN COMMERCE:

19230517

Mark Drawing

Code

(1) TYPED DRAWING

Design Search

Code

Serial Number

71358340

1A

Filing Date

November 17, 1934

Current Filing

Basis

Original Filing

Basis

1A

Change In Registration

CHANGE IN REGISTRATION HAS OCCURRED

Registration

Number

0322909

Registration Date March 26, 1935

Owner

(REGISTRANT) STANCO INCORPORATED CORPORATION DELAWARE NO. 2 PARK AVE. NEW

YORK NEW YORK

Assignment Recorded

ASSIGNMENT RECORDED

Prior

Registrations

0180361;0196392;0289671

Type of Mark

TRADEMARK

Register

PRINCIPAL

Renewal

2ND RENEWAL 19750326

Live/Dead Indicator

DEAD

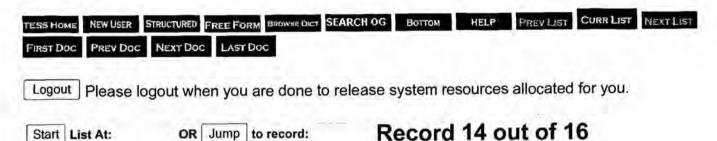
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Goods and Services

(EXPIRED) IC 003, US 004, G & S: LIQUID CLEANSING COMPOUNDS AND DETERGENTS FOR USE

ON GLASS, PORCELAIN, TILE, AND THE LIKE. FIRST USE: 19230517. FIRST USE IN COMMERCE:

19230517

Mark Drawing

Code

(1) TYPED DRAWING

Design Search

Code

Serial Number

71205239

Filing Date

November 13, 1924

Current Filing

Basis

1A

Original Filing

Basis

1A

Registration

Number

0204957

Registration

Date

October 27, 1925

Owner

(LAST LISTED OWNER) STANDARD OIL COMPANY (NEW JERSEY) UNKNOWN BAYONNE, NEW JERSEY.

Assignment Recorded

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Type of Mark Register

TRADEMARK PRINCIPAL

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FIRST USE IN COMMERCE: 19230517

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(1) TYPED DRAWING

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Code

Serial Number

71205238

Filing Date

November 13, 1924

Current Filing

Basis

1A

Original Filing

Basis

1A

Registration

Number

0196392

Registration Date

March 17, 1925

Owner

(LAST LISTED OWNER) STANDARD OIL COMPANY (NEW JERSEY) UNKNOWN BAYONNE, NEW

JERSEY.

Assignment

Recorded

ASSIGNMENT RECORDED

Prior Registrations 0180361

Type of Mark

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Mark Drawing Code (1) TYPED DRAWING

Design Search Code

Serial Number 71181872 Filing Date June 11, 1923

Current Filing Basis 1A Original Filing Basis 1A Registration Number 0180361

Registration Date February 26, 1924

Owner (LAST LISTED OWNER) STANDARD OIL COMPANY (NEW JERSEY) UNKNOWN BAYONNE, NEW

JERSEY.

Assignment Recorded

ASSIGNMENT RECORDED

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Register PRINCIPAL

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TOP

NJPDES PERMIT RENEWAL APPLICATION

DIRECT DISCHARGE TO SURFACE WATERS

PERMIT NUMBER : NJ0002089

PERMITTEE : IMTT-BX

IMTT-BX 250 EAST 22ND STREET BAYONNE, NJ 07002

EXXON COMPANY, U.S.A.
BAYONNE LUBRICANTS PLANT
1 AVENUE J
BAYONNE, NJ 07002

PERMIT ISSUANCE DATE: APRIL 30, 1993 PERMIT EXPIRATION DATE: JULY 31, 1995

TABLE OF CONTENTS

1.0	INTRODUCTION
2.0	Change of Ownership
3.0	Location
4.0	Current Operations
4.1	IMTT-BX
4.2	EXXON Corporation
5.0	Wastewater Characterization
5.1	Sources
5.2	Flow Rates
5.3	Contaminates
5.4	Wastewater Treatment Systems
5.4.1	Exxon Lube Oil Treatment Plant
	IMTT-BX Treatment Plant
5.0	Future Expansion
7.0	Lot and Block Numbers
ppend	ix A PERMIT APPLICATION FORMS

Appendix B September 1995 Quarterly Sampling Results

Appendix C Drawing F-0101 : Site Plot Plan

NJDEP FORM 1 USEPA FORM 2c

WQM-003

Figure 1 : USGS topographical map Figure 2 : Wastewater Treatment Block Flow Diagram

1.0 INTRODUCTION

This permit application is being submitted by IMTT-BX for renewal and modification of NJPDES/DSW permit number NJ0002089. Effective June 1, 1993 IMTT-BX became the Permittee and Exxon Corporation the Co-Permittee for this permit. It is requested that the renewed permit list IMTT-BX as the sole permittee and include on an interim basis Exxon Corporation as a Co-Permittee, pending resolution of related permitting issues. This permit is for the direct discharge to Surface Water of treated stormwater runoff and industrial wastewater to the Upper New York Bay and expires on July 31, 1995.

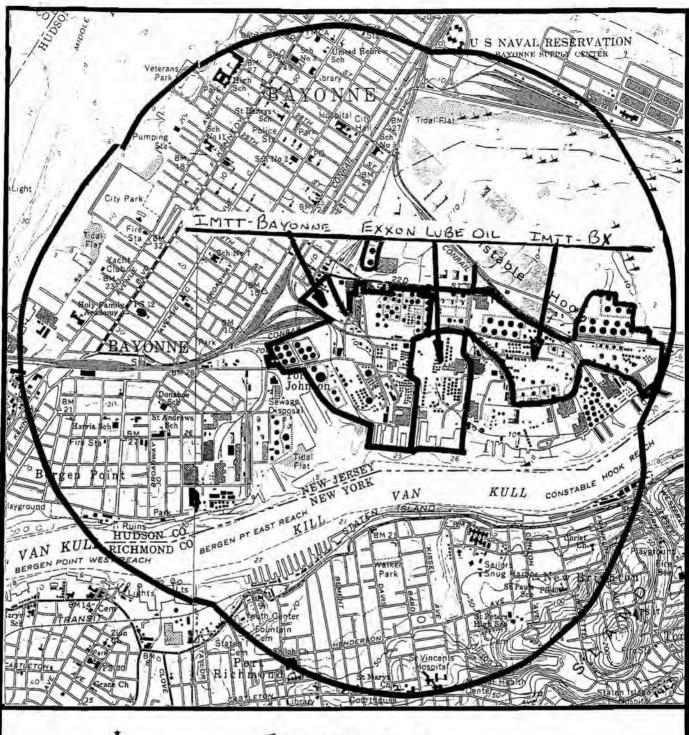
Modification of this permit is being requested in order to integrate over time within this permit the treatment of effluent currently discharged from the adjoining IMTT-Bayonne/Bayonne Industries facility (Area C on the enclosed Site Plot Plan) under the terms of NJPDES permit number NJ0001341. IMTT would than request to terminate permit number NJ0001341 and combine all activities under permit number NJ0002089. The details of combining the two permits are discussed in section 6.0.

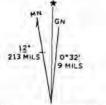
2.0 Change of Ownership

On April 1, 1993 IMTT-BX purchased from Exxon Corporation the marketing terminal and storage facilities designated as Area A on Drawing F-0101, (Appendix C). IMTT-BX subsequently leased the terminal to an associated operating company, IMTT-Bayonne. Exxon Corporation has retained ownership of the Lube Oil Facility, Area B. EXXON will also continue Site Remediation activities in Areas A and B under provisions of the ACO dated November 29, 1991 designated as 006848-15979; Book 4455. Wastewater and stormwater runoff from Areas A and B are currently processed at the wastewater treatment plant herein referenced as the IMTT-BX treatment plant and now operated under the supervision of IMTT-BX personnel.

3.0 Location

The IMTT-BX/Exxon facilities are located on approximately 250 acres in the Constable Hook section of the City of Bayonne, Hudson County, New Jersey. The facilities are bounded by 22nd Street and Hook Road on the north, Upper New York Bay on the east, neighboring industry and the Kill Van Kull waterway on the south, and neighboring industry on the west. Figure 1 shows details of the location.





UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

FIGURE ONE

Site Location Plan / 1-Mile Vicinity Map

Bayonne, Hudson County, NJ

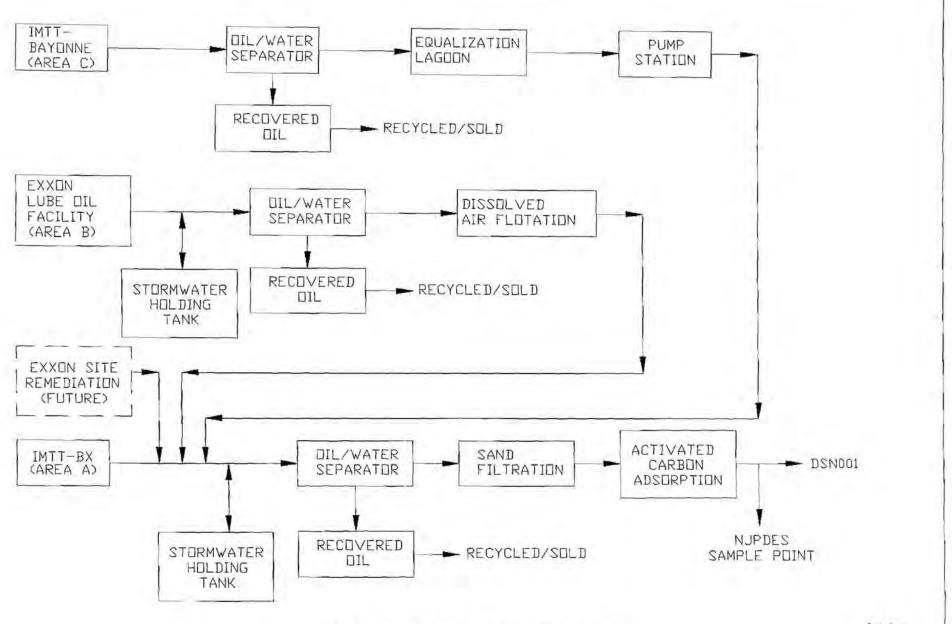
USGS Jersey City, NJ-NY Quadrangle 7.5 Minute Series (Topographic)

Date: 1967, photorev. 1981



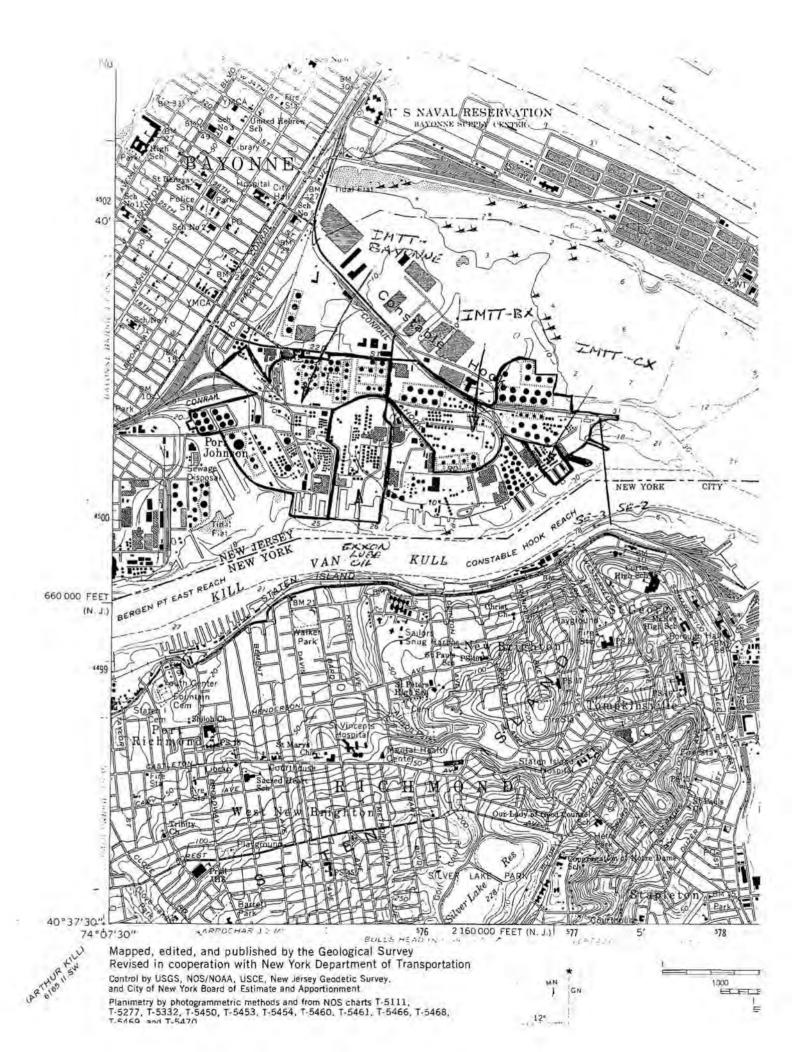
QUADRANGLE LOCATION

Figure: 1 Scale: 1"=2000'



WASTEWATER TREATMENT BLOCK FLOW DIAGRAM FIGURE #2





4.0 Current Operations

4.1 IMTT-Bayonne

Exxon has continuously conducted petro-chemical operations at this location since 1877. From 1877 until 1972 when the manufacturing operations began being dismantled, the primary activity was petroleum refining. Exxon continues to operate the Lube Oil Facility and IMTT-Bayonne has assumed operations of a liquid products storage facility on the remainder of the property. No manufacturing is done on the IMTT-Bayonne property. As noted, the ACO driven EXXON Site Remediation team also conducts activities throughout Areas A and B.

Based on the type of operations and products stored, the potential service area served by the IMTT-BX treatment plant can be divided into 10 operational areas. As shown on Drawing F-0101 these include: Yards 1,2,3,4,5,6,8,9,and the Packards yards all operated by IMTT-Bayonne, and the EXXON Lube Oil Facility.

Products are shipped in and out of the terminal facilities by truck (packaged products), tank trucks, railroad cars, barges, pipeline and tankers. Products stored include petroleum products (miscellaneous napthas, aviation gasoline, aliphatic and aromatic solvents, distillate fuels, intermediate and heavy fuels oils, and lube and process oils, waxes, asphalts, and petroleum additive products) and generally low risk chemicals such as alcohols, plasticizers and aircraft deicers.

4.2 EXXON Corporation

EXXON Corporation is the parent of Exxon Company, U.S.A. Exxon Company, U.S.A. operates a wax and lubricating oil blending, packaging and distribution facility adjacent to the property owned IMTT-BX. Lube oil base stocks and additives are received by ship, rail, or highway and finished goods are processed by blending. In addition, base stocks are also sold as is without any further processing. Product is sold in either bulk or package form.

Exxon's primary SIC Code is 5171 (wholesale distribution of petroleum products) and with a secondary code of 2992 (blending of lubricating oil).

5.0 Wastewater Characterization

5.1 Sources

Wastewater processed at the IMTT-BX treatment plant consists of equipment wash water, tank roof draw-off, decanted tank water, wastewater from tank bottoms, stormwater runoff, condensate blowdown, laboratory washwater (Exxon), groundwater infiltration and tank integrity test water.

In the near future, groundwater will be recovered and treated during some interim remedial measures (IRM) taken by Exxon site remediation under an existing ACO. Groundwater recovered from one IRM, Tank 1066 IRM, will be pretreated via gravity separation and air stripping before discharge to the IMTT-BX sewer system. This IRM will be constructed in a phased approach with an estimated maximum discharge rate of 25 gpm of pretreated groundwater to the IMTT-BX sewer system. Exxon is responsible for the permitting, construction and operation of this pretreatment system. This pretreatment system currently being designed, and therefore detailed information is not available.

Wastewater from the Exxon Lube Oil Facility (Area B) is also pre-treated in a separate treatment plant operated by Exxon personnel prior to its discharge to the IMTT-BX treatment plant for secondary treatment (see section 5.4.1 for the plant description).

5.2 Flow Rate

Stormwater runoff from the entire 250 acre eastside facility (Area A and B) is currently processed in the IMTT-BX treatment plant, and therefore the flow rate varies dramatically based on the amount of precipitation. During intense rainstorms the discharge rate is limited by the hydraulic capacity of the activated carbon adsorption system (2100 gpm). Stormwater runoff in excess of the hydraulic capacity is stored in Tank 8553.

Average and maximum flow rates for 1994 are as shown below:

Average flow rate: 0.5420 mgd Averaged Maximum flow rate: 1.5000 mgd The westside treatment plant (now separately permitted) likewise receives all stormwater from the 200 acre westside facility (Area C) and throughput is limited by the 700 gpm activated carbon units. Operation under this permit is on a continuance basis.

5.3 Contaminants

Because the range of products stored at the facility varies, the contaminants in the wastewater are also variable. For the most part, products stored at the facilities are petroleum derived fuels products and nominally benign organic chemicals. Caustic is also stored.

Prior to discharging to the sewer, an evaluation is made as to the ability of activated carbon to treat the wastewater. Highly polar, highly soluble, low molecular weight straight chain hydrocarbons, alcohols, and ketones are examples of compounds that are not well adsorbed on carbon and therefore their dispatch to the wastewater treatment system is restricted. A high quality effluent has been consistently maintained in the present system by careful control of the wastewaters fed to the treatment plant and by frequent in-process sampling. Sampling of the lead bed activated carbon effluent is used to determine carbon change out frequency. The carbon is changed when breakthrough is observed in the lead beds, thereby maintaining a buffer between sampling and final discharge to the State's waters.

Groundwater pretreated in the Exxon site remediation pretreatment system as described in Section 5.1 may contain targeted organic compounds, 20 % of which will be chlorinated compounds and heavy metals (arsenic, lead). It is estimated air stripping will remove 99.5-99.9% of the organic compounds. The effluent lead concentration released to the IMTT-BX sewer system will be less than 7.5 ppb. Discharge from the pretreatment system will be interrupted at any time when the acceptance of pretreated groundwater would result in an exceedance of permit effluent limits.

5.4 Wastewater Treatment Systems

Treated process wastewater is discharged through DSN-001 to the Upper New York Bay near it's confluence with the Kill Van Kull, (the existing permit incorrectly lists the Kill Van Kull as the receiving body of water). Wastewater from the Exxon Lube Oil facility is pretreated in a separate pretreatment plant, (operated by Exxon personnel),

and then dispatched to the IMTT-BX treatment plant for final processing.

5.4.1. Exxon Lube Oil Facility Treatment Plant

At the Exxon U.S.A. treatment plant, influent wastewater is transported by screw pump to an aboveground API separator. The API separator effluent flows through a dissolved air flotation unit to further remove contaminants. Excess rainwater is pumped to storage tanks. All effluent is than pumped to the IMTT-BX facility for further treatment.

The EXXON treatment plant is cleaned once per year and the sludge is stored, tested, and removed in accordance with NJDEP regulations. Oil skimmed from the API separator is recovered, treated, and recycled.

5.4.2 IMTT-BX Treatment Plant

The IMTT-BX Treatment Plant consists of an oil-water separator, sand filtration, and activated carbon adsorption units. The maximum hydraulic capacity of the oil-water separator is 6000 gpm. After oil-water separation, the wastewater is processed in one of four deep bed sand filtration units. The four units operate in a parallel mode, for a maximum hydraulic capacity of 4000 gpm. Following sand filtration, the wastewater is processed in three sets of two 20,000 pound activated carbon units. Each set has a hydraulic capacity of 700 gpm for a maximum design hydraulic capacity through the system of 2100 gpm.

One of two 10000 gpm pumps transfer water from the oil-water separator to a stormwater holding tank, (TK-8553), when the flow rate to the system exceeds 2100 gpm. After the high flow condition has passed, the stormwater can be returned via a gravity sewer system for treatment.

6.0 Future Expansion

Following the purchase of the Exxon property in April 1993, IMTT assumed operational responsibilities for two separately permitted wastewater treatment plants (IMTT-BX operating under NJPDES permit No. NJ0002089 and IMTT-Bayonne operating under NJPDES permit No. NJ0001341). These two facilities discharge through two separately monitored outfalls. The nature of the wastewater and treatment unit operations are similar and therefore it is not inappropriate to propose

combining the two systems.

The IMTT-Bayonne collection area, (Area C), is approximately 200 acres. All stormwater from the IMTT-Bayonne facility is treated in a manual system which must be manned at all times during operation. During prolonged rainy periods, this plant becomes capacity limited, creating a flooding problem in the plant yard.

The IMTT-BX treatment plant is fully automated and operates 24 hours a day. After the two systems are combined as is being proposed here, the facilities can be managed together, thereby reducing the potential for flooding.

Figure 2 is a block flow diagram which presents the relationship between the three existing wastewater treatment plants and EXXON's proposed new Site Remediation facility. It is proposed that the westside IMTT-Bayonne oil-water separator and equalization lagoon will be maintained in operation. The IAF unit has been marginally effective at best and will be taken out of service. The westside activated carbon units will be relocated and integrated with the IMTT-BX (eastside) treatment plant.

Additional debottlenecking upgrades to the IMTT-BX treatment plant will be also instituted in order to increase the total treatment capacity to 2800 gpm. Stormwater runoff from IMTT-Bayonne's westside operations, (Area C), will be pumped at a controlled rate through the existing sewers and pipelines to the IMTT-BX treatment plant for final treatment.

7.0 Lot and Block Numbers

Lot and block numbers for the IMTT-BX, Exxon Lube Oil and Bayonne Industries (IMTT-Bayonne westside) sites are listed below.

IMTT-BX, Exxon Lube Oil (Area A and B):

TAX LOT	BLOCK
419	1,3,4
427	3
465	1,2,3,4
466	1,2,3,4
478	1
480	1
477.01	1
465	5,6,7,8

Bayonne Industries: IMTT-Bayonne westside (Area C):

381 A

APPENDIX A PERMIT APPLICATION FORMS

NJPDES - I

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION Division of Water Quality

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT APPLICATION

- Refer to Instructions on Page 6 and Provide All Applicable Information. Please Print or Type. -

Name IMTI- I	₹ <i>V</i>	
	321 ST, CH	ARIES AIRE
		State L'a zip Code 70130
ederal Tax I.D.#		Telephone (5°4) _ 586 - 8300
PROPERTY OWN	ver(s)	
ame IMTT - E	3 x	
ermanent Legal Address_	321 ST. CH	ARLES AVE
ity or Town NEW	ORLEANS	State L 2 _ Zip Code _ 70/30
LOCATION OF	Астічіту	Telephone ()
LOCATION OF	Астічіту	Telephone ()
LOCATION OF A	ACTIVITY IMTT-BX	
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Name		N.J. L	icense No
Name of Firm, if employee			
Street Address			
City or Town		State	Zip Code
Telephone ()	-		
OTHER REQUIRED PERMITS			
f any of the following applications have been sub	mitted for this s	ite/facility, comp	plete the applicable information.
Permit Type	Applicatio	n Status	Application Date
	Pending (check	Approved one)	(or Application No.)
Treatment Works Approval (Municipal - Industr	ial)		
Exemption From Sewer Ban	N/A	N/A	N/A
Water Quality Management Plan Amendment	NA	NA	N/A
Potable water supply well	NA	NA	_ N/A
Local Permits (specify type)	N/A	NA	-N/A
PUBLIC NOTICE CERTIFICATION	ON (For Gen	eral Permit Au	thorizations Only)
nave included the appropriate certification for my		101,11111111111111111111111111111111111	
PROJECT DESCRIPTION (Brief D	escription of l	Discharge to be	Permitted)
SEE TEXT.			

9. PERMITTING STATUS OF THIS FACILITY/SITE

[1. Check appropriate box for each discharge activity (left column). 2. If the facility has an existing permit, list permit number(s), if known (center column). 3. Check requested permit action (right columns).]

			F	REQUESTED	PERMIT A	CTION
DISCHA	RGE ACTIVITY (CATEGORY) CODES	PERMIT No.	NEW	RENEW.	MOD.	TERM
Dischar	ge to Surface Water (DSW)					
□ A.	Sanitary Surface Water Discharge					
□ A8.	Discharge to Regional Outfall Authority					
B.	Industrial/Commercial Surface Water Disch.	NJ 000 2089		X		
D B4B	. General Petroleum Product Cleanup Permit				7 - 3 i	
X C.	Thermal Surface Water Discharge	NJ 000 2085		×		
	General Permit Non-Contact Cooling Water	0.5-12-1-1		The Art and the		
	Combined Sewer Overflow	LIFE SELTE		4 7 4 1		
	Discharge Allocation Certificate - Municipal		/4-2	Lumi		
	Discharge Allocation Certificate - Industrial	-71		LYFE	V	
RF.	Stormwater Runoff	N 2000 2089		X		
Discharg	e to Ground Water (DGW)					
J F.	Landfill - Industrial/Commercial Waste					
] G.	Spray Irrigation - Industrial					
] H.	Overland Flow - Industrial			Total Control		
]].	Infiltration/Percolation Lagoon - Industrial					
] J.	Surface Impoundment - Industrial					
1 K.	Underground Injection (UIC) - Industrial					
K1.	Auto Dealers Carwash			V = .==		
0.	Landfill - Municipal/Sanitary					
P.	Spray Irrigation - Sanitary					
1 Q.	Overland Flow - Sanitary	A Barrier and All Park		9.1		
	Intiltration/Percolation Lagoon - Sanitary		A			1
	Surface Impoundment - Sanitary				Fig. 1. Spilling a	
	Underground Injection (UIC) - Sanitary			17		
U.	Dredge Spoils					
ludge, R	lesiduals, and Indirect Dischargers					
7.3						
D.	Land Application of Sludge and Septage					
	Land Application of Industrial Waste Residuals					
	General Food Processing Byproducts		To the little			
	Sludge Processing/Distribution Facility					
	Residuals Transfer Facilities (Sludge)			**		
	Residuals Infiltration/Percolation Lagoon - Domestic					
	Residuals Infiltration/Percolation Lagoon - ndustrial	A TOTAL OF				
	Residuals Surface Impoundment - Domestic			1		
	Residuals Surface Impoundment - Industrial					
	Significant Indirect User (SIU)					
her/Mise	cellaneous					
X. C	Confidentiality Request					
	Other/Miscellaneous		- 15 1			

Source of Water Supply	y;	UPPER NEW YORK B
Name of Receiving Stre	earn (for Discharge to Surface Water):	UPPER NEW YORK BY
Name of Watershed Ba	sin (for Discharge to Surface Water):	
Name of Geological For	mation (for Discharge to Ground Water):	N/A
Name of Receiving POT	W (for SIU):	N/A
STANDARD IT	NDUSTRIAL CLASSIFICATIO	n Code(s):
SIC Code #	Products or Service Provided	
4226	STORAGE OF PETE	OLEUM PRODUCTS EHEMICAL
Enforcemen	T ACTIONS AT THIS FACIL	ĮTY
ENFORCEMEN Enforcement		ETY Status
Enforcement		
Enforcement	Action Date of Action	
Enforcement	Action Date of Action	Status

Print or Type: Name and Position

-		(Applicant/Operator's I	Name)		10.7-7-2
authoriz	e to act as my agent	representative in all matters	pertaining to my a	application th	e following person:
Name		Position			
			City_		
		Telephone (
Signature of A	gent and Date		Signature of App	licant/Operator	and Date

		(Proper n this application. As owner thorize the DEP to conduct o			
In addition	on, I certify: (check	"yes" or "no")	+	YES	NO
a. The a	ctivity will take place	e in an easement?		-	X
	f the entire project (c.) is or will be locat	e.g. pipeline, disposal area,			
	y the State of New			-	<u>X</u>
wells, et owned b	c.) is or will be locat y a municipality or c	e.g. pipeline, disposal area, ed within property ounty? (If "yes", contact the 3461 for an applicability det		_	<u>X</u>
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Robert C.	Weaver				permission
Vice Presi	dent - Technical	Director			rty owners is application).

Print or Type: Name and Position

authoris	ze to act as my agent/represe	(Applicant/Operator's N	lame)	v application t	ha fallowing ners
Name					
Address					
State	Zip Code	Telephone ()		
Signature of A	gent and Date		Signature of A	oplicant/Operato	or and Date
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16. CERTIFICATION BY APPLICANT/OPERATOR

I certify, under penalty of law, that the information provided in this application and the attachments is true, accurate, and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

During Bulgarias for R.R. FISETTE Signature of Applicant/Operator and Date 1/31/95

TERMINAL MANAGER

INSTRUCTIONS FOR COMPLETING FORM NJPDES - 1

This form should accompany all NJPDES permit applications.

- 1. General Information (items #1 8) Complete the requested applicant and facility information.
- 2. Permitting Status of this Facility (item# 9) Please list all NJPDES permits issued to the subject facility (in addition to the permit being applied for at this time).
- 3. Water Supply/Discharge Information (item# 10) Provide the source of water supply. If the discharge is to surface water, provide the name of the receiving stream and watershed basin, and indicate if it is conveyed by a storm sewer. If the discharge is to ground water, provide the name of the Geological Formation. If the discharge is to a Publicly Owned Treatment Works (POTW), provide the name of the POTW.
- 4. Standard Industrial Classification Code(s) (item # 11) List in order of priority, all Standard Industrial Classification (SIC) Codes which best reflect the principal products or services provided by the facility. The codes are available in the "Standard Industrial Classification Manual 1987". List additional codes, if necessary, for secondary products or services.
- 5. Enforcement Actions at this Facility (item# 12) If applicable, identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, civil penalties, notice of violations, or criminal actions concerning pollution issued against the facility during the last five (5) years. Attach additional sheets if necessary.
- 6. Waste Storage at this Facility (item# 13) If applicable, list all locations involved in the storage of solid or liquid waste at the facility for which the NJPDES application is being made, and the ultimate disposal site(s) of solid or liquid wastes generated by the facility being permitted. Attach additional sheets if necessary.
- 7. Signatures (items 14, 15, and 16) Where indicated under items #14 and #16, the signature of the applicant/operator shall be the operating entity who alone or along with other persons has primary management and operational decision making authority over the facility covered under this application. This authority includes authorizing capital expenditures and/or hiring personnel. Item #15 should be completed by the owner of property.

Should you need assistance in completing the application, please call the appropriate phone number listed below:

- Discharges to Surface Water (Industrial) (609) 292-4860
- Discharges to Surface Water (Municipal) (609) 633-3869
- Discharges to Ground Water (609) 292-0407

- Sludge and Residuals Issues (609) 633-3823
- Discharges to a Publicly Owned Treatment Works (609) 633-3823

CERTIFICATE

I, the undersigned, DO HEREBY CERTIFY, that set forth below is a complete, true and correct copy of certain resolutions adopted by unanimous consent of the Partnership Committee of IMTT-BX, a Delaware partnership, which resolutions were duly adopted by said Partnership Committee on March 2, 1995, that I am the Secretary and keeper of the minutes and records of said partnership; and that said resolutions have not been rescinded or modified.

RESOLVED, that IMTT-BX execute a New Jersey Pollution Discharge Elimination System Permit Application, and submit same to the State of New Jersey, Department of Environmental Protection, Division of Water Quality, all with regard to discharge of water to upper New York Bay from property owned by IMTT-BX in the City of Bayonne, County of Hudson, State of New Jersey, bearing street address 250 East 22nd Street, Bayonne, New Jersey 07002.

FURTHER RESOLVED, that Robert C. Weaver, Technical Director, be and he is hereby authorized and directed to execute and deliver, for and on behalf of IMTT-BX the above described application in such form as he may approve.

BE IT FURTHER RESOLVED, that the said officer be and is hereby authorized to take such other and further steps as may be necessary to comply with the foregoing resolution.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 2nd day of March, 1995.

Secretary to the Partnership Committee

IMTT-BX

Please print or type in the unshaded areas only.

2G SEPA

APPLICATION FOR PERMITTE DISCHARGE WASTEWATER

EXISTING MANUFACTURING, COMMERCIAL MINING AND SILVICULTURAL OPERATIONS

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M THE FRONT corm runoff, leaks; or spills, are any of the discharges described in Items II-A or B intermittent or sessonal? NO (go to Section III) YES (complete the following table) THE TRANSPORT A. PLOW SEPTEMBER STATE 2. OPERATION(1)
CONTRIBUTING FLOW 3. FREQUENCY h. TOTAL VOLUME .: (specify with units) E PLOW RATE OUTFALL CONTRIBUTING FLOW S. DAYS b. MONTHS NUMBER PER WEEK PER YEAR MAXIMUM. LONG TERM (list) L MAXINUM (specify overage) (specify average) NSEE TEXTA III. PRODUCTION A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility? No (to to Section IV) YES (complete Item III-B) production (or other measure of operation)? B. Are the limitations in the applicable effluent guideline expressed in terms of production for other measure of operation)? YES (complete Item III-C) C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls. 1. AVERAGE DAILY PRODUCTION Z. APPECTED OUTFALLS . C. OPERATION, PRODUCT, MATERIAL, ETC. (SPECIFY) A. GUANTITY PER DAY b. UNITE OF MEASURE (list outfall numbers) IV. IMPROVEMENTS A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of waste water treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions. 5. 多河南流 YES (complete the following table) No (so to Item IV-B) ALFINAL BOTE IDENTIFICATION OF CONDITION. 2. AFFECTED OUTFALLS S. BRIEF DESCRIPTION OF PROJECT AGREEMENT, ETC. 8. NO. A SOURCE OF DISCHARGE B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect

CONTINUE ON PAG

MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

V. INTAKE AND EFFLUENT CHARACTERISTICS

- A, B, & C: See instructions before proceeding Complete one set of tables for each outfall Annotate the outfall number in the space provided.

 NOTE: Tebles V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.
- D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

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VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

YES (list all such pollutants below)

No (go to Item VI-B)

IMIT DOES NOT MANUFACTURE ANY PRODUCTS.
THE CHEMICALS LISTED BELOW MAY BE A
CONSTITUENT IN PRODUCTS STORED AT THE
FACILITY:

BENJENE, LOLUENE, DI-N-BUTYL-PHTHALATE,
DI-N-OCTYL-PHTHALATE, ISOPHORONE
ETHYLBENZENE, NAPHTHALENE

EXXON REPORTS THE FOLLOWING MAY be found AT SMALL CONCENTRATIONS IN LUBRICATING OIL OR PRODUCTS CURRENTLY STORED AT THE PLANT.:

COPPER, ZINC, PHENULS, AULUENE, NAPHTHALENE

A testing of the	in the last 3 years? and describe their purposes below)		on VIII)
QUARTERLY, THE TEST SP THE TEST D	NUPDES PERMIT I LEUTE TOXICITY BIO EZIES IS MYSICH SI URATION IS 94 HE	Assay Tes	Ting.
	ormed by a contract laboratory or consulting firm? Iress, and telephone number of, and pollutants such laboratory or firm below)	□NO (go to Secti	on IX)
A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZI
) IEA, INC.	628 ROUTE 10 WHIPPANY, N.J. 07981	(201) 428-8181	NOLATILES -BN/BNA -OIL/GREASE -TSS
2) CHYUN ASSOCIATES, INC	267 WALL STREET PRINCETON, N.J. 08540	609- 924-5151	TOC
1 0	165 Flanchest Ave.	908 -	0 1
3) IT Corporation	ED150N, NJ. 08837	225.2000	Bro. Assay Ge
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C. CERTIFICATION Certify under penalty of law that this document assure that qualified personnel properly gather arthose persons directly responsible for gathering th	ED (50 N), N J. 08837 and all attachments were prepared under my direct of evaluate the information submitted. Based on my einformation, the information submitted is, to the bor submitting false information, including the positive submitting false information, including the positive submitting false information, including the positive submitting false information.	tion ar supervision in acco y inquiry of the person or pe est of my knowledge and be	ersons who manage the system elief, true, accurate, and comple
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EPA Form 3510-2C (8-90)

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages, SEE INSTRUCTIONS.

V. INTAKE AND	EEEI LIENT	CHADACTEDICT	ice landlessed	**** *** * * * * * * * * * * * * * * *	. F 2 01
V. INTAKE AND	ELLFORMI	CHANACIENISI	ica (continued	trom page 3 o	r rorm 2-C1

OCIL

PART A - You r	must provide th	e results of at I	east one analysis	for every pol	lutant in this ta	ble. Complete	one table for	reach outfall.	See instruc	tions for addition	nal details.	- V
		Y	2.	EFFLUENT	A 4400	and the		3. UN	IITS		TAKE (option	nal)
I. POLLUTANT	B. MAXIMUM	DAILY VALUE	b. MAXIMUM 30	lable) VALUE	CLONG TERM	ilable) VALUE	1 d. NO. OF	(specify i	f blank)	a. LONG	TERM	A NO. OF
	CONCENTRATION	(2) MASS	CONCENTRATION	(z) MASS	CONCENTRATION	(z) MASS	ANALYSES	A. CONCEN-	b MASS	CONCENTRATION	[2] MASS	ANALYSES
a. Blochemical Oxygen Demand (BOD)	0	APPENDIG	0	-						CONCERNIATION		>
b. Chemical Oxygen Demand (COD)	SEE	APPENDI	B									-
c. Total Organic Carbon (TOC)	_	s u q.	^	_	6.05 pp	10.52 4	Ç	-	-		-	- i
d. Total Suspended Solids (TSS)	-	12		1-1	4.4 ppm		Co	1-6	17=		-	1
e, Ammonia (as N)	SEE	APPENO	4B							1		·>
f. Flow	1.50	MGD	VALUE		O.54	20 MED	6	-	-	VALUE		-
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE -		_
h. Temperature (summer)	3 i		VALUE		VALUE Z G	3	3	°C		VALUE		
l. pH	MINIMUM C. S.Z.	MAXIMUM	MUMINIM	MUMIXAM		al at	6	STANDAR	DUNITS		- J	m. pilotoil

PART 8 - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfell. See the instructions for additional details and requirements.

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	B. BE-	b. se-	s. MAXIMUM D.	AILY VALUE		BAY VALUE	CLONG TERM	lable) VALUE	d NO. OF	a. CONCEN-	- L MASS	AVERAGE	VALUE	ANAL
(If available)		CONCENTRATION	(z) MASS	CONCENTRATION	(2) MABS	CONCENTRATION	, (2) MASS	ANAL-	TRATION	n mnas-	CONCENTRATION	(2) m vas	YSES	
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residuel		×												
c. Color		4												11-
d. Fecal Coliform		Y												
e. Fluoride (16984-48-8)		X												
f. Nitrate Nitrite (as N)		X								1 111				

ITEM V-B CONTINUED FROM FRONT I. POLLUT-ANT AND CAS NO. 2. MARK 'X' 3. EFFLUENT 4. UNITS 5. INTAKE (optional) b. MAXIMUM 30 DAY VALUE | C.LONG TERM AVRG. VALUE | d. NO. OF 3. BE- D. BE-CIEVED LIEVED 8. MAXIMUM DAILY VALUE PRE- AB-SENT SENT CONCENTRATION (2) MASS AVERAGE VALUE NO.0 S. CONCEN-ANALb. MASS YSES CONCENTRATION CONCENTRATION CONCENTRATION (if available) (2) MASS (1) MASS (2) MASS (2) MASS g. Nitrogen, Total Organic (as N) h. Oil and 2.38 ppm 173 PPM Greate 5 6 i. Phosphorus (as P), Total (7723-14-0) I. Radioactivity (1) Alpha, Total (2) Beta, Total (3) Radium, Total (4) Radium 226, Total k. Sulfate (as SO₄) (14808-79-8) I. Sulfide (as 8) m. Sulfite (as SO₃) (14265-45-3) n. Surfactants o. Aluminum, Total (7429-90-5) p. Barlum, Total (7440-39-3) q. Boron, Total (7440-42-8) r. Cobalt, Total (7440-48-4) s. Iron, Total (7439-89-6) t, Magneslum, Total (7439-95-4) u. Molybdenum, Total (7439-98-7) v. Manganese, Total (7439-96-5) w. Tin, Total (7440-31-5) x. Titanium, Total (7440-32-6)

					1	الساعف									1.1
CONTINUED FRO	M PAG	E 3 OF	FORM	M 2-C	EPA I.O.	NUMBER (copy fr	rom Item 1 of F	OCC	NUMBER	-					
2-a forwaste believ of at lidinitro conce	r all su water e is abs east or opheno ntratio	outfalls sent. If he anal ol, or 2-	MS fr. s, and r you ma ysis for methy 00 ppb	actions that apply nonrequired GC/h rk column 2a for a r that pollutant if 1-4, 6 dinitrophen or greater. Othery	y to your indust MS fractions), no any pollutant, you you know or had ol, you must pounts wise, for polluta	ss wastewater, ref ry and for ALL toxi- nark "X" in column ou must provide the are reason to belie rovide the results outs ints for which you nase review each co	c metals, cyani n 2-b for each p e results of at le eve it will be dis of at least one mark column 2b	ides, and total phe ollutant you know ast one analysis fo scharged in conce analysis for each o, you must either s	enols. If you are yor have reason or that pollutant intrations of 10 of these polluta submit at least of	not require to believe if you man ppb or grents which ne analysi	ed to mark col is present. M ik column 2b fo ater. If you ma you know or h s or briefly des	umn 2-a (se ark "X" in co or any pollute ark column 2 nave reason cribe the rea	condary indus plumn 2-c for e ant, you must p 2b for acrolein, to believe that sons the pollu	tries, nonpre each pollutar provide the re acrylonitrile you dischar tant is expec	ocess nt you esults le, 2,4 rge in cted to
AND CAS		MARK				the same of the sa	FFLUENT			100	4. UN	IITS	5. INT	AKE (option	onal)
NUMBER	BTEST	D. BE-	C BE-	a. MAXIMUM D	AILY VALUE		able) VALUE	C.LONG TERM	lable VALUE	d NO.OF	a. CONCEN-	b. MASS	A LONG	TERM	b NO.
(if avallable)	QUIR-	SENT	SENT	CONCENTRATION	[2] MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MARS	YSES	TRATION	U, III A 3 3	(I) CONCEN-	[2] MASS	YSE
METALS, CYANID	E, ANI	D TOT	AL PHI	ENOLS			15	The second		h Total		tighten, and			1
M. Antimony, rotal (7440-36-0)			X												1
2M. Arsenic, Total 7440-38-2)															
BM, Beryllium, Fotal, 7440-41-7)								-							
M. Cadmium, Total (7440-43-9)															
M. Chromium, rotal (7440-47-3)															
M. Copper, Total		7													

BTEST L BE C BE 0. MAXIMU (if avallable) METALS, CYANIDE, AND TOTAL PHENOLS 1M. Antimony, Total (7440-36-0) 2M. Arsenic, Total (7440-38-2) 3M. Beryllium, Total, 7440-41-7) 4M. Cadmium, Total (7440-43-9) 5M. Chromium, Total (7440-47-3) 6M. Copper, Total (7440-50-8) 7M. Lead, Total (7439-92-1) 8M. Mercury, Total (7439-97-6) 9M. Nickel, Total (7440-02-0) 10M. Selenium, Total (7782-49-2) 11M, Silver, Total (7440-22-4) 12M. Thaillum, Total (7440-28-0) 13M. Zinc, Total (7440-66-6) 14M. Cyanida, Total (57-12-5) 15M. Phenols, Total DIOXIN DESCRIBE RESULTS 2.3.7.8-Tetra-

chlorodibenzo-P-Dioxin (1764-01-6) CONTINUED FROM THE FRONT

1. POLLUTANT		MARK					EFFLUENT				4. UI	VITS	5. IN	TAKE (option	onal)
AND CAS NUMBER	ATEST.	P. SE-	C BE-	a. MAXIMUM D	AILY VALUE	b, MAXIMUM 3	Hable) VALUE	C.LONG TERM	AVRG. VALUE	d NO.OF	a CONCEN	D. L. WILL		E VALUE	b. NO
(if available)	QUIR-	SENT	SENT	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MARR	ANAL-	a. CONCENTRATION	b. MASS	(1) CONCEN-	(1) MASS	YS
GC/MS FRACTION		LATIL	E COM						7	V			THATION		1000
1V. Acrolein (107-02-8)			X							17			-	1	
2V. Acrylonitrile (107-13-1)											1 1	-			
3V. Benzene (71-43-2)															
4V. Bis (Chloro- methyl) Ether (542-88-1)					-										
5V. Bromoform (75-25-2)															
6V. Carbon Tetrachloride (56-23-5)														-	
7V. Chlorobenzene (108-90-7)															
8V. Chlorodi- bromomethane (124-48-1)															
9V. Chloroethane (75-00-3)		3-								T.					
10V, 2-Chloro- ethylvinyl Ether (110-75-8)															
11V. Chloroform (67-66-3)															
12V. Dichloro- bromomethane (75-27-4)													11		
13V. Dichloro- difluoromethana (75-71-8)															
14V. 1,1-Dichloro- ethane (75-34-3)				-											
15V. 1,2-Dichloro- ethane (107-06-2)															
16V. 1,1-Dichloro- ethylene (75-35-4)															
17V. 1,2-Dichloro- propane (78-87-5)								-							
18V. 1,3-Dichloro- propylene (542-76-6)		11													
19V, Ethylbenzene (100-41-4)															
20V. Methyl Bromide (74-83-9)			H												

EPA I.D. NUMBER (copy from Item 1 of Form 1) OU IFALL NUMBER

CONTINUED FROM PAGE V-4 I. POLLUTANT 2. MARK 'X' 3. EFFLUENT 4. UNITS 5. INTAKE (optional) AND CAS NUMBER ATEST D. BE. C. BE. MAXIMUM DAILY VALUE D. MAXIMUM \$9 DAY VALUE C.LONG TERM AVRG. VALUE d. NO. OF A LONG TERM b. NO. a a. CONCEN-& MASS ANAL (if available) TRATION (I) CONCENTRATION (2) MASS GC/MS FRACTION - VOLATILE COMPOUNDS (continued) 22V. Methylene Chloride (75-09-2) 23V. 1,1,2,2-Tetra-chloroethane (79-34-5) 24V. Tetrachloroethylane (127-18-4) 25V. Toluene (108-88-3)26V. 1,2-Trans-Dichloroethylene (156-60-5) 27V. 1,1,1-Trlchloroethane (71-55-6) 28V. 1,1,2-Trlchloroethane (79-00-5)29V. Trichloroethylene (79-01-6) 30V. Trichlorofluoromethane (75-69-4) 31V. Vinyl Chloride (75-01-4) GC/MS FRACTION - ACID COMPOUNDS 1A. 2-Chloropheno (95-57-8) 2A. 2,4-Dichloro-phenol (120-83-2) 3A. 2,4-Dimethyl-phenol (105-67-9) 4A. 4,6-Dinitro-O-Cresol (534-52-1) 5A. 2,4-Dinitro-phenol (51-28-5) 6A. 2-Nitrophenol (88-75-5) 7A. 4-Nitrophenol (100-02-7) BA, P-Chloro-M-Cresol (59-50-7) 9A. Pentachlorophenol (87-86-5) 10A. Phenol (108-95-2) 11A. 2,4,6-Trl-

1. POLLUTANT		MARK				3.	EFFLUENT				4. UI	VITS	5. IN	TAKE (opti	(mal)
AND CAS NUMBER	ATEST	D	C BE-	a. MAXIMUM D	AILY VALUE	b. MAXIMUM 3	BAY VALUE	C.LONG TERM	AVRG. VALUE	d NO. OF	a. CONCEN-		AVERAG	EVALUE	h NO
(if available)	QUIN:	SENT	SENT	CONCENTRATION	(z) MASS	CONCENTHATION	(1) MASS	CONCENTHATION	(2) MASS	YSES	TRATION	b. MASS	(1) CONCEN-	(2) MASS	YS
GC/MS FRACTION	- BAS	SE/NEU	JTRAL	COMPOUNDS		1									
18. Acenaphthene (83-32-9)			X	2 = 1									-		
2B. Acenaphtylene (208-96-8)															
3B. Anthracene (120-12-7)															
4B. Benzidine (92-87-5)													1		
5B. Benzo (a) Anthracene (56-55-3)															
68. Benzo (a) Pyrene (50-32-8)															
78. 3,4-Benzo- fluoranthene (205-99-2)															
8B. Benzo (ghi) Perylene (191-24-2)															
9B. Benzo (k) Fluoranthene (207-08-9)															
10B. Bis (2-Chloro- ethoxy) Methane (111-91-1)															
11B. Bis (2-Chloro- ethyl) Ether (111-44-4)										lini					
12B. Bis (2-Chloroiso- propyl) Ether (102-60-1)															
13B. Bis (2-Ethyl- hexyl) Phthalate (117-81-7)													į		
14B. 4-Bromo- phenyl Phenyl Ether (101-55-3)															
158. Butyl Benzyl Phthalete (85-68-7)															
16B. 2-Chloro- naphthalene (91-58-7)															
17B. 4-Chloro- phenyl Phenyl Ether (7005-72-3)															
18B. Chrysone (218-01-9)															
198. Dibenzo (a,h) Anthracene (53-70-3)															
208. 1,2-Dichloro- benzene (95-50-1)				41.21											
21B. 1,3-Dichloro- benzene (541-73-1)			X											NTINUE OF	

1. POLLUTANT	2.	MARK	'X'	(TO)			EFFLUENT				4. UI	STIP	5, IN	TAKE (option	onal)
AND CAS NUMBER	ATEST	hee-	C. GE-	a. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	DAY VALUE	CLONG TERM	Table VALUE	d NO. OF	a. CONCEN-			TERM	b. NO.
(if available)	BOIN-	D BE-	SENT	CONCENTRATION	[2] MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	YSES	TRATION	b MASS	(I) CONCEN-	(z) MASS	YSES
GC/MS FRACTION					continued1										
22B. 1,4-Dichloro- benzene (106-46-7)			X												
23B. 3,3'-Dichloro- benzidine (91-94-1)			1												
248. Diethyl Phthalate (84-66-2)															
25B. Dimethyl Phthalate (131-11-3)			-												
26B. DI-N-Butyl Phthalate (84-74-2)			- N					T-							
27B. 2,4-Dinitro- toluene (121-14-2)															
28B. 2,6-Dinitro- toluene (606-20-2)			-												
29B. Di-N-Octyl Phthelate (117-84-0)															
30B. 1,2-Diphenyi- hydrazine (as Azo- benzene) (122-66-7)						7						/=4			
31B. Fluoranthene (206-44-0)										11.24					
328. Fluorene (86-73-7)								/ 1							
33B. Hexachlorobenzane (118-74-1)															
348. Hexe- chlorobutediene (87-68-3)															
35B. Hexachloro- cyclopentadiene (77-47-4)															
36B. Hexechloro- ethane (67-72-1)													1		-
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)							1 3								-
38B. Isophorone (78-59-1)															-
39B. Naphthalene (91-20-3)															+
40B. Nitrobenzene (98-95-3)															1-
41B. N-Nitro- sodimethylamine (62-75-9)															-
42B. N-Nitrosodi- N-Propylamina		4	A									4.7			

. POLLUTANT	2. N	MARK	.х.			3.1	EFFLUENT	COLUMN TO THE			4 111	NITS	5. INTAKE (optional)		
AND CAS NUMBER		h ==-	C	B. MAXIMUM	DAILY VALUE	b. MAXIMUM S	PAY VALUE	CLONG TERM	AYRG. VALUE	d NO OF	Long Life Street, Street, St.	1115	S. IN	TERM	
(if available)	OUIR-	PENT	PENT	B. MAXIMUM ((2) MASS	CONCENTRATION	(1) MADE	CONCENTRATION	(z) MARE	ANAL-	B. CONCEN-	b. MASS	AVERAG	VALUE	ANAL
C/MS FRACTION	- BAS	E/NE	JTRAI	L COMPOUNDS	(continued)	CONCENTRATION	1000000	CONCENTRATION	1.7	1323	F 4. C. A.Y.		(I) CONCEN-	(2) MASS	YSES
3B. N-Nitro- odiphenylamine 36-30-6)			X												1
4B. Phenanthrene 35-01-8)						7 1									
5B. Pyrene 129-00-0)															
68. 1,2,4 - Tri- hlorobenzene 120-82-1)			-												
IC/MS FRACTION		ricidi	8	V					A 4.3						
P. Aldrin 309-00-2)	1		X												
P. G-BHC 319-84-61															
P. β-BHC. 319-85-7)															
P. γ-BHC 58-89-9)										1					
iP, δ-BHC 319-86-8)															
iP. Chlordane 57-74-9)									-						
'P. 4,4'-DDT 50-29-3)															
P. 4,4'-ODE 72-55-9)															
P. 4,4'-DDD 72-54-8)															
10P. Dieldrin 60-57-1)															
1P. G-Endosulfan 115-29-7)															
2P. β-Endosulfan 115-29-7)			,							- 8					
3P. Endosulfan ulfate 1031-07-8)			6	1											
4P. Endrin 72-20-8)						-		11							
5P. Endrin Aldshyde 7421-93-4)				-= 1											
6P. Heptachlor 76-44-8)	-4		V								A				

EPA I.D. NUMBER (copy from Item I of Form I) OUTFALL NUMBER

CONTINUED FROM PAGE V-8

I. POLLUTANT	2.1	MARK .	X'				FFLUENT				4. UI	NITS	5. INT	AKE fopti	ional)
AND CAS NUMBER	A TEST-	ber-	C es-	a. MAXIMUM D	AILY VALUE	b. MAXIMUM 30	DAY VALUE	C.LONG TERM	WRG. VALUE	d NO. OF	. CONCEN-	b. MASS	AVERAG	TERM	b. NO.
	2.0			CONCENTRATION	(2) MASS	CONCENTRATION	(z) MASS	CONCENTRATION	(2) MASS	VSES.	TRATION	TRATION L MASS		[2] MARS	YSE
GC/MS FRACTION	~ PES	TICIDE	S (co	ntinued)			3	V 10.					Visite Control		4
17P. Heptachlor Epoxide (1024-57-3)			X							1					
18P. PCB-1242 (53469-21-9)															
19P. PCB-1264 (11097-69-1)	LH														
20P. PCB-1221 (11104-28-2)															
21P. PCB-1232 (11141-16-5)													1		
22P. PCB-1248 (12672-29-6)													7.1		
23P. PCB-1260 (11096-82-5)															
24P. PCB-1016 (12674-11-2)															
25P. Toxaphene (8001-35-2)			V									T			

PAGE V-9

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY (DEPE) ENVIRONMENTAL REGULATION

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES) (SUPPLEMENT TO THE STANDARD APPLICATION FORM CP-1)

STATEMENTS OF CONSENT

APPLICANT/OWNER (From page 1 of CP-1 Form)	IMTT-BX
LOCATION OF WORK SITE	250 EAST 22 ND ST.
NAME OF PROJECT/FACILITY	IMT-BX
TYPE OF PERMIT APPLICATION	DSW
NJPDES Permit # (if applicable) > _	NJ 0002089
A-1 CONSENT BY GO (Consent by the municipality in	
	Bavonne
consents to the submission of the ab for approval. I further certify tha with the requirements of all municip	t the project as proposed conforms
Name and Title Leonard P. Kiczek, (Print or Type)	
* Cite authorization to sign for the Governing Body	
Resolution # 95-03-01-043	Date3/1/95
Submit the resolution with the appl granting authority to sign exists, resolution, consenting to the proje application.	the Governing Body's full
** <i>NOTE</i> :	
1. Complete for all NJPDES applica 2. For most TWA applications this sewerage entity (for example, sewer municipal utilities authority, join for regulating the construction and and conveyance facilities within th governing body consent requirement Section A-2. TWAs for industrial/copursuant to NJPDES/DSW or DGW permi	section may be omitted if a age authority, utilities authority, t meeting, etc.) has responsibility operation of wastewater treatment e municipality. In such cases, the may be satisfied by completing mmercial facilities discharging

4-003	25 115.2
14.1	4 3

distance when the

A-2 CONSENT BY SEWERAGE ENTITY --

the	e of this agency, I hereby certify that
consents to the submission of	
Signed* a	Date
Name and Title	3
* Cite authorization to sign for the Agents	
Resolution #	Date
granting authority to sign exconsenting to the project, an	e application. If no such resolution late, the Agency's full resolution, at he submitted with the application.
sewerage entity (for example, municipal utilities authority	as, this section must be completed when a assertage authority, utilities authority, icini meeting, etc.) has responsibility on and operation of wastewater treatment bin the municipality.
(For NJPDES/SIU and Press As an authorized representative the	WASTEWATER TREATMENT FACILITY ** reatment TWA Applications only) a of this agency, I hereby certify that
consents to the submission of tor approval. I further certi-	the above listed application to the DEPE ty that the project conforms with the d the agency agrees to accept waster
Signed*	Date
Name and Title	
Cite authorization to sign for the Agency	
Resolution #	Date
granting authority to sign exi	e application. If no such resolution introduction, the Agency's full resolution, at he application.
** NOTE: For NJPDES/SIU applications, towner of the receiving wastews the entity listed under A-2.	this section must be completed when the ster treatment plant is different than

IMIT-BX

4 27 15 17 14 47 5 - 11F

Executive Office, 32° St. Charlet Aroque, New Orleans, Ls. 70100 (U.S.A.). Phone. (504) 585-300, Pax (504) 505-6733, Telex, 58/4191 or 662-1261

March 15, 1995

RE: Renewal of NJPDES Permit Disches Minobaces

Dear Ms. Aqubiti:

Form WQM-00% Section As it is clised and has been completed in accurance to the section. As mirring, Mr. Ken J. Rakowski, F.K., According for the City of Gardan West ordered and according this matter. Mr. Askowski indicated that a docal Sewerage Entity loss not wist and has me Major at Bayons is responsible for the operation of the collection system Therefore, enduragent by the Major of Section A-1 is sufficient. This is consistent that is footnote in Section A-2.

Please only tytalf of Mr. France in 1201 858-8080 should you have any question. The extraction of the market.

Carretty yours, Carry - M. Bress. Track M. Bress.

on: Dr. R.C.Weaver Mr. R.R.Fisette Mr. K.J.Rakowski

Per5.ltr

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY (DEPE) ENVIRONMENTAL REGULATION

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES)
(SUPPLEMENT TO THE STANDARD APPLICATION FORM CP-1)

STATEMENTS OF CONSENT

	IMT-BX
(From page 1 of CP-1 Form)	
LOCATION OF WORK SITE	250 EAST 22 ND ST.
NAME OF PROJECT/FACILITY	IMH-BX
TYPE OF PERMIT APPLICATION	DSW
NJPDES Permit # (if applicable) >	NZ 0002089
A-1 CONSENT BY G	OVERNING BODY ** In which the project is located)
As an authorized representative of that the	the governing body, I hereby certify
(Name of	Municipality or Authority)
consents to the submission of the a	bove listed application to the DEPE
with the requirements of all munici	nat the project as proposed conforms
with the requirements of all munici	par Ordinances.
Signed*	Date
Marine and Assault	
Name and Title(Print or Type)	
(Print or Type)	
(Print or Type)	Date
(Print or Type) * Cite authorization to sign for the Governing Body	olication. If no such resolution the Governing Body's full
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projection.	lication. If no such resolution the Governing Body's full
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the app granting authority to sign exists, resolution, consenting to the projapplication. ** NOTE:	lication. If no such resolution the Governing Body's full ect, must be submitted with the
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projapplication. ** NOTE: 1. Complete for all NJPDES application.	plication. If no such resolution the Governing Body's full ect, must be submitted with the sations.
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projapplication. ** NOTE: 1. Complete for all NJPDES applications this sewerage entity (for example, sewerage)	clication. If no such resolution the Governing Body's full ect, must be submitted with the sations.
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projapplication. ** NOTE: 1. Complete for all NJPDES applications this sewerage entity (for example, sewemunicipal utilities authority, joing severage entity).	clication. If no such resolution the Governing Body's full ect, must be submitted with the sations. section may be omitted if a rage authority, utilities authority, int meeting, etc.) has responsibility
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projapplication. ** NOTE: 1. Complete for all NJPDES applications this sewerage entity (for example, sewemunicipal utilities authority, joi for regulating the construction and severage and sign application and severage and severage entity (for example, sewemunicipal utilities authority, joi for regulating the construction and severage entity (for example, sewemunicipal utilities authority)	clication. If no such resolution the Governing Body's full ect, must be submitted with the sations. section may be omitted if a grage authority, utilities authority, int meeting, etc.) has responsibility and operation of wastewater treatment
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projapplication. ** NOTE: 1. Complete for all NJPDES applications this sewerage entity (for example, sewemunicipal utilities authority, joi for regulating the construction and and conveyance facilities within the sewerage entity.	clication. If no such resolution the Governing Body's full ect, must be submitted with the sations. Section may be omitted if a crage authority, utilities authority, int meeting, etc.) has responsibility doperation of wastewater treatment the municipality. In such cases, the
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projapplication. ** NOTE: 1. Complete for all NJPDES applications this sewerage entity (for example, sewemunicipal utilities authority, joi for regulating the construction and conveyance facilities within to governing body consent requirements.	clication. If no such resolution the Governing Body's full ect, must be submitted with the sations. Section may be omitted if a crage authority, utilities authority, int meeting, etc.) has responsibility doperation of wastewater treatment the municipality. In such cases, the may be satisfied by completing
* Cite authorization to sign for the Governing Body Resolution # Submit the resolution with the appropriating authority to sign exists, resolution, consenting to the projapplication. ** NOTE: 1. Complete for all NJPDES applications this sewerage entity (for example, sewemunicipal utilities authority, joi for regulating the construction and and conveyance facilities within the sewerage entity.	clication. If no such resolution the Governing Body's full ect, must be submitted with the sations. Section may be omitted if a erage authority, utilities authority, int meeting, etc.) has responsibility doperation of wastewater treatment the municipality. In such cases, the may be satisfied by completing commercial facilities discharging

A-2 CONSE	NT BY SEWERAGE ENTITY **
As an authorized representa the	tive of this agency, I hereby certify that
consents to the submission for approval. I further ce with the requirements of th	(Name of Agency) of the above listed application to the DEPE ertify that the project as proposed conforms as agency.
Signed*	Date
Name and Title	
(Print or Type)	
* Cite authorization to sign for the Agency	
Resolution #	Date
granting authority to sign	the application. If no such resolution exists, the Agency's full resolution, must be submitted with the application.
sewerage entity (for examp municipal utilities author.	tions, this section must be completed when a le, sewerage authority, utilities authority, ity, joint meeting, etc.) has responsibility ction and operation of wastewater treatment within the municipality.
(For NJPDES/SIU and P	OF WASTEWATER TREATMENT FACILITY ** retreatment TWA Applications only) tive of this agency, I hereby certify that
for approval. I further ce:	(Name of Agency) of the above listed application to the DEPE rtify that the project conforms with the and the agency agrees to accept waste- treatment.
Signed*	Date
Name and Title	
* Cite authorization to sign for the Agency	
Resolution #	Date
granting authority to sign	the application. If no such resolution exists, the Agency's full resolution, must be submitted with the application.
** NOTE: For NJPDES/SIU applications owner of the receiving was the entity listed under A-2	s, this section must be completed when the tewater treatment plant is different than 2.

orm WQM-003 2/93	3 of 4
B. CERTIFICATION BY OWNER OF WASTE	WATER CONVEYANCE SYSTEM**
I (we) hereby certify that to the best of water conveyance system, into which the application will connect, has adequate of N.J.A.C. 7:14A-1.9 ("Adequate Conveyance (we) am (are) not aware of inadequate coin any portion of the downstream facility wastewater from this project to the treatment of Municipality or Authority	project proposed under this capacity in accordance with capacity"). Furthermore, I conveyance capacity conditions ties necessary to convey the
Signed*	Date
42.2.3.3.5.5.co	
Name and Title	
(Print or Type)	
* Cite authorization to sign for the Governing Body	
	Date
Submit the resolution with the application. If no such resolution	
granting authority to sign exists, the Governing Body's full	
resolution consenting to the project must be submitted with the	
application.	
** For TWA applications, this section mus	st be completed by the owner/
operator of the wastewater conveyance	system into which the project
named herein will directly connect.	
(Name of Wastewater Treatment Plant does not exceed the presently permitted certify that with the addition of the fapplication, the permitted design capace (we) further certify that the treatment with its NJPDES permit requirements and	d design capacity. I (we) also low proposed by this city will not be exceeded. I plant is currently complying based upon my (our)
assessment of all information pertinent continue to do so with the additional f	low from this project.
Accepted for Treatment By	
(Name of Tr	eating Authority)
Signed:	Date
Name and Title	
(Print or Type)	
I Cite authorization to sign for the Governing Body	Total Vision Control of the Control
	Date
Submit the resolution with the application. If no such resolution	
granting authority to sign exists, the Governing Body's full	
resolution consenting to the project must be submitted with the	
application.	
* For TWA applications, this section mu	ast be completed by the owner
of the wastewater treatment facility re	ceiving the wastewater
and and the contract of the c	

identified in this application.

** For the purposes of this certification, committed flow means the sum of the 1) actual metered flow, 2) flow from DEPE approved TWA applications (not yet operational), and 3) flow from locally approved projects that do not require DEPE approval.

ADDITIONAL INFORMATION (For TWA Applications)

- Approvals, permits, service contracts or other reservations of flow capacity issued or agreed to by any participating municipality or sewerage agency do not constitute the required approval of the DEPE.
- 2. For computation of actual flow at the receiving wastewater treatment plant, the average flow processed by the facility for the four (4) month period immediately proceeding the submission of the application shall be used. Pursuant to the NJPDES Regulations (N.J.A.C. 7:14A), no application shall be submitted to the DEPE if the wastewater treatment facility is not meeting its discharge permit requirements.

LACK OF CONSENT *

- 1. The affected sewage authority or municipality must consent to the application or submit comments to the Department within 60 days of the applicant's request for consent. Prior to the expiration of the 60-day period to respond to a request for a written statement of consent, the municipality or sewage authority may request a 30-day extension for review of a request for consent.
- Any document issued by a sewerage authority or a municipality which is tentative, preliminary, or conditional approval shall not be considered a statement of consent.
- When the affected sewerage authority or municipality does not consent to a project, it shall state all reasons for rejection or disapproval in a resolution and send a certified copy of the resolution to the Department.
- 4. When the affected sewage authority or municipality expressly denies a request for a written statement of consent for a project, the permit application may be determined by the Department to be incomplete for processing; or in the alternative, the Department may review the reasons for denial. Any such reasons shall be considered by the Department in determining whether to issue a draft permit in accordance with N.J.A.C. 7:14A-7.6, or a Treatment Works Approval or sewer connection approval in accordance with N.J.A.C. 7:14A-12.
- 5. When the affected municipality or sewage authority does not issue a written statement of consent in accordance with (1) above, or a denial in accordance with (3) above, the Department, upon receipt of proof that the applicant has delivered to the affected agency a written request for a written statement of consent, shall review the reasons therefor, if known on the basis of reasonably reliable information. Any such reasons shall be considered by the Department in determining whether to issue a draft permit in accordance with N.J.A.C. 7:14A-7.6, or a Treatment Works Approval or sewer connection approval in accordance with N.J.A.C. 7:14A-12. The Department may, in its discretion, deem the application to be incomplete pending the expiration of the time period set forth in (1) above.
 - * This section has been excerpted from the NJPDES regulations for guidance purposes only. Please refer to N.J.A.C. 7:14A-2.1(k) for the complete requirements concerning statements of consent.

NOTICE: FALSE STATEMENTS, REPRESENTATIONS, OR CERTIFICATIONS IN ANY APPLICATION, RECORD, OR DOCUMENT ARE SUBJECT TO FINES AND PENALTIES PURSUANT TO THE WATER POLLUTION CONTROL ACT (N.J.S.A. 58:10A-10F 2 AND 3)

Appendix B: Quarterly Analytical Results

Results of the September 1994 quarterly sampling event are enclosed. The TOC concentration in the effluent is low, indicating a low organic concentration. Therefore this would indicate that the BOD and COD concentrations will also be low. Based on the TOC results, IMTT is requesting relief for the BOD and COD data submission requirement. NJDEPE has verbally concurred with this point of view. The long term averages for the previous 6 months of sampling are tabulated on Form 2C.

QUALIFIERS

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- U Indicates that the compound was analyzed for but not detected.
- J This flag indicates an estimated value. This flag is used (1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL or PQL but greater than zero, and (3) when the retention time data indicate the presence of a compound that meets the Pesticide/Aroclor identification criteria, and the result is less than the CRQL or PQL but greater than zero.
- B This flag is used when the analyte is found in the blanks as well as the sample. It indicates possible sample contamination and warns the user to use caution when applying the results of this analyte.
- E Exceeds calibration curve
- DL Dilution Run
- RE Rerun
- RX Re-extract

CLIENT : <u>IMTT - Bayonne</u>

JOB No.: 43772

MATRIX: Water

000005

VOLATILE ORGANIC ANALYSIS RESULTS

Units: ug/l

Quantitation Factor (QF)	1.00	1.00	1.00			Method Practical
Method Blank I.D.	>FJ646	>FJ646 >FJ646				Quantitation Limits (PQL)*
Lab I.D.	941012B	43772002	43772004			
Client I.D	METHOD BLANK	DSN001GRAB	INTAKEGRAB			
Acrolein	U	u	U			50.0
Acrylonitrile	Ü	U	Ü			50.0
Benzene	U	Ü	U		. 150/655000/650000/150/00/01	5.0
Bromodichloromethane	Ü	Ü	Ü	200002900000000000000000000000000000000	CULTURAL PROCESSION CONTRACTOR CO	5.0
Bromomethane	U	Ŭ	U			10.0
Bromoform	U	Ü	Ū			5.0
Carbon Tetrachloride	U	Ü	Ü			5,0
Chlorobenzene	U	U	U			5.0
Chloroethane	U	Ü	U			10.0
Chloroform	U	U	Ü		0.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000	5.0
2-Chloroethylvinylether	U	Ü	U			5.0
Dibromochloromethane	U	U	U			5.0
m-Dichlorobenzene	U	U	U			5.0
o-Dichlorobenzene	U	U	U			5.0
p-Dichlorobenzene	U	U	U			5.0
1,1-Dichloroethane	U	U	U			5.0
1,2-Dichloroethane	U	U	IJ			5.0
1,1-Dichloroethene	U	U	U			5.0
Trans-1,2-Dichloroethene	U	U	U			5.0
1,2-Dichloropropane	U	U	U			5.0
cis-1,3-Dichloropropene	U	ט	U			5.0
Ethylbenzene	U	U	U			5.0
Methylene Chloride	U	U	U			5.0
Tetrachloroethene	- U	U	U			5.0
Toluene	U	U	IJ			5.0
Trichloroethene	U	U	U			5.0
Trichlorofluoromethane	U	Ü	U			5.0
Trans-1,3-Dichloropropene	U	U	U			5.0
1,1,1-Trichloroethane	U	U	U			5.0
1,1,2,2-Tetrachloroethane	U	U	U			5.0
1,1,2-Trichloroethane	U	U	U			5.0
Vinyl Chloride	U	U	U			10.0
Chloromethane	U	ט	U			10.0
Dichlorodifluoromethane	U	U	U			5.0

^{*} Sample PQL (Practical Quantitation Limit) = Method PQL X QF

Matrix: WATER

Job No.: 43772

Client : IMTT - BAYONNE

Semivolatile Compounds

		G/L			
Dilution Factor (DF)	1.00	1.00			Practical Quantitatio n Limits
Method Blank I.D.	>GI869	>GI869			(PQL) with no dilution
Lab I.D.	2298SVB	43772001			
Client I.D.	SBLK	DSN001COMP			
Compound					
Acenaphthylene	U	U			10
Acenaphthene	U	U			10
Anthracene	U	U			10
Benzo(k) Fluoranthene	U	U			10
Benzo(a) pyrene	Ū	U			10
Bis(2-chloroethyl)ether	U	U			10
Bis(2-Chloroethoxy)methane	U	U			10
Bis(2-chloroisopropyl)ether	U	Ü			10
Butylbenzylphthalate	U	U			10
Chrysene	U	U		-	10
Diethyl Phthalate	Ū	U			10
1,2-Diphenyl hydrazine	Ŭ	U			10
Fluoranthene	U	U			10
Fluorene	U	U		100	10
Hexachlorocyclopentadiene	U	Ü			10
Hexachloroethane	U	U			10
Indeno(1,2,3-cd)pyrene	U	U			10
Isophorone	U	U			10
N-Nitroso-di-n-Propylamine	U	U			10
N-Nitrosodiphenylamine (1)	U	U			10
N-Nitrosodimethylamine	U	Ü			10
Nitrobenzene	U	Ü			10
Phenanthrene	U	U			10
Pyrene	Ü	Ü			10
Benzo(g,h,i)perylene	U	U			10
Benzo(a)anthracene	U	Ü			10
1,2-Dichlorobenzene	Ü	Ü			1.0
1,2,4-Trichlorobenzene	Ū	Ū			10
Dibenz(a,h)anthracene	U	Ū	3.00		1.0
1,3-Dichlorobenzene	Ū	Ü	N W. N. S.		10
1,4-Dichlorobenzene	Ü	Ü			10
2-Chloronapthalene	Ū	U			10
2-Chlorophenol	Ü	Ü			1.0
2-Nitrophenol	Ü	Ŭ			10
Di-N-Octyl phthalate	Ü	Ü	2		10
2,4-Dichlorophenol	U	Ū		1	10
2,4-Dimethylphenol	Ŭ	Ü			10
2,4-Dinitrotoluene	Ū	Ü			10
2,4-Dinitrophenol	Ü	Ŭ			50

Dilution Factor (DF)	1.00	1.00			Practical Quantitatio n Limits
Method Blank	>GI869	>GI869			(PQL) with no dilution
Lab I.D.	2298SVB	43772001	43772001		
Client I.D.	SBLK	DSN001COMP			
Compound					
2,4,6-Trichlorophenol	U	U			10
2,6-Dinitrotoluene	U	U			10
3,3'-Dichlorobenzidine	U	U			20
4-Bromophenyl phenyl ether	U	U			10
4-Chlorophenyl phenyl ether	U	U			10
4-Nitrophenol	U	U			50
4,6-Dinitro-o-cresol	U	U			50
Phenol	U	U			10
Naphthalene	U	U			10
Pentachlorophenol	U	U			50
Bis(2-ethylhexyl)phthalate	3J	5JB			10
Di-N-Butylphthalate	U	U		J	10
Benzidine	U	U			80
Hexachlorobenzene	U	U			10
Hexachlorobutadiene	U	Ū			10
4-Chloro-3-methylphenol	U	U			10
Benzo(b) fluoranthene	U	U			10

^{*} Sample PQL = Method PQL X DF

Job No: 43772

Client: <u>IMTT - Bayonne</u>

Matrix: WATER

METALS DATA SUMMARY

LAB ID CLIENT ID Analyte	DSN001COMP,	MDL
Antimony	<60.0	60.0
Arsenic	<10.0	10.0
Beryllium	<5.00	5.00
Cadmium	<5.00	5.00
Chromium	<10.0	10.0
Copper	<25.0	25.0
Lead	<3.00	3.00
Mercury	<0.200	0.200
Nickel	<40.0	40.0
Selenium	<100	5.00
Silver	<10.0	10.0
Thallium	<100	10.0
Zinc	<20.0	20.0

CLIENT: IMTT-BAYONNE

JOB NO: 20940-43772

WATER

OIL & GREASE

mg/1

LAB I.D.	CLIENT I.D.	RESULTS
BLANK		<1.00
BLANK SPIKE		82.6 % RECOVERY
43772002 DSN001GRAB		2.34
43772004	INTAKEGRAB	<1.12

Client: IMTT-BAYONNE

Job No: 20940-43772

WATER

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Inorganic Data Summary mg/1

Lab I.D.	43772001	43772003		
Client I.D.	DSN001 COMP	INTAKE COMP	MDL	
Analyte				
Cyanide	<0.025	NR	0.025	
Phenols	<0.005	NR	0.005	
TOC	5	NR	1	
TSS	2.00	1.31	1.00	

MDL - Method Detection Limit

NR - Not Requested

APPENDIX C
SITE PLOT PLAN
DRAWING F-0101

EXON COMPANY, U.S.A.

POST OFFICE BOX 9000 . BAYONNE, NEW JERSEY 07002-9000

DEPT. ENVIRON. PROTECTION Division Water Resources WOM - Administration

MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE PLANT

D D ESCH

December 29, 1986

24-87

Mr. John Gaston, Administrator Water Quality Management New Jersey Department of Environmental Protection CN 029 Trenton, NJ 08625



Dear Mr. Gaston:

This letter documents the excursion of the loxic Substance Limit for Chlorobenzene and Ethylbenzene, respectively, at the Bayonne Plant on November 13, 1986 which was previously reported by telephone. Analysis of the grab samples indicated results of 120 ug/l and 52 ug/l as compared to our NJPDES limit of 50 ug/1 for each substance.

Results of the samples were not received until December 23, 1986. Upon receipt, an investigation of the cause was undertaken. It is suspected that the rainstorm effect washed down the sewer system, but the investigation will continue to cover all areas that could possibly have contributed to the excursion. Due to the time lapse between the sampling and test completion the cause cannot be readily traced.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

DEC 31 1986

State of New Jersey Department of Environmental Protection Division of Water Resources Office of the Director

US EPA Region II Permit Administration 26 Federal Plaza New York, NY 10278

Metro Region NJDEP Division of Water Resources 2 Babcock Pl. West Orange, NJ 07052

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MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE PLANT

D.D. ESCH

February 24, 1987

DEPT. ENVIRON. PROT LILITION Division Water Resources

WQM - Administration

Mr. John Gaston, Administrat Water Quality Management New Jersey Department of Environmental Protection CN 029 Trenton, NJ 08625

EXON COMPANY, U.S.A.

POST OFFICE BOX 9000 . BAYONNE, NEW JERSEY 07002-9000

STATE OF MEW JERSEY DEPT. ENVIRONMENTAL PROTECTION DIVISION WATER RESOURCES BUR, OF IND. WASTE MONT.

MAR 1 3 1987

Dear Mr. Gaston:

This letter documents an excursion of the Oil and Grease Limit at the Bayonne Plant on February 12, 1987 which was previously reported by telephone. Analysis of the grab sample indicated a result of 19 mg/1 as compared to our NJPDES maximum limit of 15 mg/l.

An investigation of the cause of this excursion was undertaken. The weekly grab sample before the investigation was normal and sample results indicate it has returned to normal since our excursion. The Plant's intake water indicated a slight increase in the oil and grease level but not enough to cause the violation. The Plant's separator operation was normal during this time frame and all other indicators showed normal operation. As a result of this investigation, it currently appears that an incorrect laboratory test may have been the cause.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours.

LBMcGrath/el

C: US EPA Region II Permit Administration 26 Federal Plaza New York, NY 10278

Metro Region NJDEP Division of Water Resources 2 Babcock Pl. West Orange, NJ 07052

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EXON COMPANY, U.S.A.

POST OFFICE BOX 9000 + BAYONNE, NEW JERSEY 07002-9000

MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE PLANT

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DIVISION OF HAZARDOUS WASTE MANAGEMENT

January 29, 1987

FEB 0 9 1987

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BUR OF IND. WAS ...

Mr. John Gaston, Administrator Water Quality Management New Jersey Department of

Environmental Protection

CN 029

Trenton, NJ 08625

Dear Mr. Gaston:

This letter documents the excursion of the Toxic Substance Limit for Chlorobenzene and Ethylbenzene, respectively, at the Bayonne Plant on January 8, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 91 ug/l and 97 ug/l as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until January 27, 1987. Upon receipt, an investigation of the cause was undertaken. Due to the time lapse between the sampling and test completion the cause cannot be readily traced but the investigation will continue to cover all areas that could possibly have contributed to the excursion.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

LBMcGrath/el

C: US EPA Region II
Permit Administration
26 Federal Plaza
New York, NY 10278

Metro Region NJDEP Division of Water Resources 2 Babcock Pl. West Orange, NJ 07052 GAPOST PIE

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EXON COMPANY, U.S.A.

POST OFFICE BOX 9000 + BAYONNE, NEW JERSEY 07002-9000

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MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE TERMINAL State of New Jersey
Department of Environmental Protection
Division of Water Resources
Office of the Director

HAZARDOUS WAS MANAGEMENT PROGRAMS

D.D. ESCH MANAGER

Mr. John Gaston, Administrator Water Quality Management New Jersey Department of Environmental Protection CN029 Trenton, New Jersey 08625 August 3 RECEIVED

DEPT. ENVIRON. PROTECTION
Division Water Resources
WQM - Administration

Dear Mr. Gaston:

This letter documents an excursion of the Toxic Substance Limit for Chlorobenzene and Toluene at the Bayonne Terminal on August 6, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 140 ug/l and 540 ug/l respectively, as compared to our NJPDES limit of 50 ug/l for each substance.

The results of these samples were received on August 31, 1987. We are continuing our ongoing investigation into areas that could possibly have contributed to these excursions. In looking back to the period when these samples were taken, we noted that extensive rainstorms before and during the sampling took place. This raises the possibility that this storm washed down the sewer system and could have caused these exceedances. However, due to the time lapse between the sampling and test completion the cause is not easily traced.

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

LBMcGrath/el

C: US EPA Region II
Permit Administration
26 Federal Plaza
New York, New York 10278

Metro Region NJDEP Division of Water Resources 2 Babcock Place West Orange, New Jersey 07052

EXON COMPANY, U.S.A.

POST OFFICE BOX 9000 . BAYONNE, NEW JERSEY 07002-9000

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HAZARDOUS WASTE MANAGEMENT

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1987 August 18,

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Department of Ellipper til Protection
Division of Wite Resources Office of the Director

MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE TERMINAL

Mr. John Gaston, Administrator Water Quality Management New Jersey Department of Environmental Protection CN 029 Trenton, New Jersey 08625

Dear Mr. Gaston:

This letter documents an excursion of the Toxic Substance Limit for Chlorobenzene, Ethylbenzene and Toluene at the Bayonne Terminal on July 2, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 150 ug/1, 90 ug/1 and 2490 ug/1 respectively, as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until August 18, 1987. Upon receipt of the results, an investigation of the cause was undertaken. Extensive rainstorms before and during the sampling time frame washed down the sewer system and potentially caused the are continuing the investigation exceedances. We exploring all potential areas that could possibly have contributed to the excursion. Due to the time lapse between the sampling and test completion the cause is not easily traced.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of individuals immediately responsible for obtaining information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

LBMcGrath/el 009

US EPA Region II Permit Administration 26 Federal Plaza New York, NY 10278

Metro Region NJDEP Division of Water Resources 2 Babcock Place West Orange, NJ 07052

JUL' 0 9 1987

MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE PLANT

D'O. ESCH

STATE OF NEW JERSEY DEPT, ENVIRGHMENTAL PROTECTION DIVISION WATER RESOURCES BUR. OF IND. WASTE MENT.

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HAZARDOUS WASTE MANAGEMENT PROGRAMS

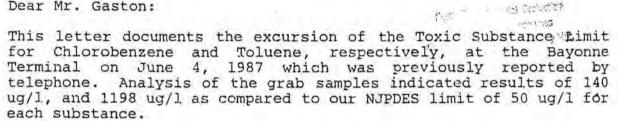
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June 26, 1987

Mr. John Gaston, Administrator Water Quality Management New Jersey Department of Environmental Protection CN 029 Trenton, New Jersey 08625

Dear Mr. Gaston:



Results of the samples were not received until June 25, 1987. Upon receipt of the results, an investigation of the cause was undertaken. It is suspected that extensive rainstorms before and during the sampling time frame washed down the sewer system/ causing the exceedance, but we are continuing the investigation to explore all potential areas that could possibly have contributed to the excursion. Due to the time lapse between the sampling and test completion the cause cannot be readily traced.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

D. D. Each Brown

LBMcGrath/el 009

US EPA Region II Permit Administration 26 Federal Plaza New York, NY 10278

Metro Region NJDEP Division of Water Resources 2 Babcock Place West Orange, NJ 07052

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DEPT. ENVIRON, PROTECTION Division Water Resources WQivl - Administration

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MARKETING DEPARTMENT SPECIALTY PRODUCTS BAYONNE PLANT

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Mr. John Gaston, Administrator Water Quality Management New Jersey Department of Environmental Protection CN 029 Trenton, New Jersey 08625

POST OFFICE BOX 9000 - BAYONNE, NEW JERSEY 07002-9000

Dear Mr. Gaston:

May 28, 1987

Emplier is JUN 0 9 1987

-1-n1 71 Results wer: REW JERSEY THEMPAL PROTECTION PETERSE MANY DIVISION WATER RESOURCES BUR OF IND. WASTE MENT.

This letter documents the excursion of the Toxic Substance Limit for Toluene, Chlorobenzene and Ethylbenzene, respectively, at the Bayonne Terminal on May 7, 1987 which was previously reported by telephone. Analysis of the grab samples indicated results of 528 ug/1, 150 ug/1 and 110 ug/1 as compared to our NJPDES limit of 50 ug/l for each substance.

Results of the samples were not received until May 22, 1987. Upon receipt, an investigation of the cause was undertaken. Due to the time lapse between the sampling and test completion the cause cannot be readily traced. A detailed investigation will continue to cover all areas that could possibly have contributed to the excursion.

I certify under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Very truly yours,

LBMcGrath/el 009

US EPA Region II Permit Administration 26 Federal Plaza New York, NY 10278

Metro Region

NJDEP

Division of Water Resources

2 Babcock Place

West Orange, NJ 07052

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O JUN 3 1987 State of Hew Jersey Department of Environmental Protection